LABOR-FEDERAL SECURITY APPROPRIATIONS FOR 1953

WEDNESDAY, MARCH 12, 1952

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met at 10:30 a. m., pursuant to recess, in room F-39, the Capitol, Hon. Dennis Chavez (chairman of the subcommittee) presiding.

Present: Senators Chavez, Hill, Knowland, and Ecton.

Senator CHAVEZ. Come to order, please.

This morning we are going to hear witnesses who represent the general public on the matter of cancer research.

Mr. Adams, are you ready to proceed?

FEDERAL SECURITY AGENCY

PUBLIC HEALTH SERVICE

NATIONAL INSTITUTES OF HEALTH

STATEMENT OF DR. CHARLES CAMERON, MEDICAL AND SCIENTIFIC DIRECTOR, AMERICAN CANCER SOCIETY, NEW YORK CITY

Dr. CAMERON. Mr. Chairman, I am Dr. Charles Cameron, the medical and scientific director of the American Cancer Society.

Mr. Adams was unable to be here because of illness. I have his statement which I would like to offer for the record, if I may.

(The statement referred to follows:)

STATEMENT OF JAMES S. ADAMS, CHAIRMAN, EXECUTIVE COMMITTEE, AMERICAN CANCER SOCIETY, INC.

I am James S. Adams, a general partner in the banking firm of Lazard Freres in New York. I am chairman of the executive committee and of the research committee of the American Cancer Society, as well as a member of the National Advisory Cancer Council. I have frequently appeared before this committee urging adequate support for the National Cancer Institute in its fight against this disease and I appreciate the opportunity of again appearing before you today to state what I believe are the budgetary needs of the Institute for the fiscal year ending in 1953. I speak from the viewpoint of a taxpayer as well as a participant in the public effort to find a cure and solution for the dread disease of cancer.

I would like to say, gentlemen, that as a businessman and as a banker, I am aware perhaps more fully than some others that the national budget must be kept to an absolute minimum to aid in maintaining the solvency of the country. I believe that in some areas the present national budget should be cut. But in the field of cancer research and control in which the National Cancer Institute operates, I believe profoundly and without reservation that in spite of the need for reduced expenditures by the Federal Government, the Public Health Service

budget that you have before you for consideration now, which was presented by the executive department, is completely inadequate. I believe it is inadequate not only for the fiscal year 1953, but that it must be increased if the gains that have already been made in the fight against cancer are to be secured and if continuing progress is to be made in attacking the disease.

I do not say this lightly. I am fully aware that witnesses come before you and before other segments of the Appropriations Committee time after time to argue the merits of their own program without regard to the relationship of that program to the whole budget. I recognize that this is a professional budgetary problem, that protagonists of one program express pious views about the total national budget and strike forceful blows for the part of the budget in which they are interested. But I want you to believe me when I tell you that in my business capacity, Federal expenditures are a most important consideration in a great many problems which I am charged with the responsibility of handling. Therefore, I am neither unmindful to the requirements of the national budget, nor am I ignoring the fact that the ultimate budget is the sum total of its component parts. What I contend is that in the area of which I am speaking, in the cancer field, justice is not being done to the needs of the people who are stricken by the disease or who are affected by the disease by having it strike someone in their family. I am fully aware of the basis on which the Executive budget is computed. I sympathize with the effort toward reduction in general, but I say to you, gentlemen of the Appropriations Committee who are hearing this testimony for presentation to your colleagues on the floor, that depsite the necessity for the closest scrutiny of every budget request you have and perhaps for the reduction of many items in those requests, an equally close scrutiny of the needs of cancer research and control will show you as it showed me that if progress is to continue at the rate that it should continue in this field, the proposed support of the National Cancer Institute must be increased.

Gentlemen, I would like to present to you our view of the budget for the Institute as we believe after study it should be.

You will note that if you compare the budget voted by the Congress for the fiscal year 1952 and the Executive budget for the fiscal year 1953 it appears after eliminating the figure of $4,625,000 of liquidation cash that the budget for the fiscal year 1953 exceeds by a small amount—some $360,000—the budget for the fiscal year 1952. This conclusion is not warranted, however, because included in the fiscal year 1953 budget is an allowance of $688,000 for the operation of the Clinical Center at Bethesda—a new activity to start in the latter part of the year. This means that the net difference between the appropriation for the National Cancer Institute for fiscal year 1952 and the Executive budget for the year 1953 is a reduction of some $323,000. We believe that any reduction in the present level of support of the National Cancer Institute would be a grave and perhaps even a disastrous step to take. On the other hand, we are convinced that the program of the Institute for the fiscal year 1953 should be supported in increased amounts—at least those shown in the last column of this exhibit. We believe that these are minimum amounts requisite to secure the gains already made in the cancer field, to provide for additional badly needed laboratory facilities, to insure a continuing supply of trained scientists, and to enter into four additional fields of cancer research work. These fields are institutional research grants which will be treated more fully later, research into the biological effects of high energy radiation—a subject of particular importance in this atomic age, an investigation of cancer cure claims, and the work at the Clinical Center where laboratory developments can be applied to human patients under controlled conditions.

We are also recommending a resumption of the construction program in the amount of $5,000,000.

In the category of research projects, it will be noted we recommend an increase from $3,100,000 to $4,900,000, approximately the same amount as we recommended a year ago. Twenty-nine of the fifty-five new facilities partially financed by Government funds have now come into operation. Others are nearly ready for occupancy. With these expanding opportunities, it is inevitable that there will be more new and promising projects for support. New requests have come in at the rate of approximately $1,000,000 a year. There has been no increase in the appropriations for research projects in either 1951 or 1952. Accordingly, in order to make effective use of new facilities and newly trained young scientists, additional support for projects must be forthcoming.

We strongly urge that the level of research fellowship support which for the last 2 years has been pegged at about $500,000, be increased to $750,000. Due

to the increased cost of living, it has been necessary to increase the amount of each individual fellowship by approximately 10 percent so that by appropriating for next year exactly the same amount of money as the Institute had last year, will actually result in a reduction in the number of scientists who can receive training. It is estimated that the $500,000 proposed in the Executive budget will support only about 175 persons in training. The $750,000 would provide for approximately 260 fellows, which is still far below the number of applications which would merit support were funds available. The records show that approximately 89 percent of the scientists who have been trained under National Cancer Institute research fellowships continue in this field after their fellowships have been completed.

The $4,261,000 recommended for the direct research operations at Bethesda allows for no increase in the scope of that operation. The difference between the $4,137,000 appropriated for the fiscal year 1952 and the $4,261,000 recommended for the fiscal year 1953 represents only mandatory salary increases. The Executive budget provision of $4,012,000 would require an actual contraction in the work.

We believe that the program which this budget will provide is well conceived and is one which the American public will support. The medical consideration will be dwelt on by the professional witnesses who will speak to you later this morning. But I believe it would be well to orient all our thinking against a statement of the cancer problem in terms which every citizen can understand. The striking facts are: 215,000 cancer deaths will occur this year, 70,000 of these could be prevented by early diagnosis and prompt and effective treatment. Twenty-two million people alive today will die of cancer unless new cures or preventative measures are found. At the present time one out of every seven people who dies, dies of cancer. Cancer is the No. 2 cause of death in this country. One out of very two homes will be struck by cancer. During the course of World War II, approximately two and one-half times as many deaths were caused by cancer as were caused by hostilities in the armed services.

This outlook is something that a country such as ours will not tolerate as a human consideration. But looking at it sheerly from the point of productivity, we have an equally striking picture of economic loss: In World War II, 5,000,000 men between the ages of 18 and 37 were rejected for military service on a medical basis, and of these, 32,000 were unavailable to the Military Establishment because they had suffered from cancer, and other neoplasms.

In other words, we were denied the manpower for two full infantry divisions because this disease had struck men of military age.

Each year, 113,000 man-years of production are lost. This is simply a graphic way of saying that people who are otherwise employable but who are disabled by cancer would contribute to the economy of the country that much working time if cancer did not prevent them from doing so. These lost man-years of labor are more impressive perhaps when they are expressed in earning capacity—$341,000,000 in the value of production lost in 1950 because of cancer.

I am sure you feel as I do that apart from the deaths and suffering which we all have felt in some measure or other in our personal lives, and which we abhor whether or not they have cut across our own individual experiences, the economic loss alone is sufficiently compelling to demand a greater expenditure to solve the problems of the disease than is currently recommended. If we consider this aspect of the problem alone, the effect of the current executive budget is that we are spending about $15,000,000 against a redeemable figure of $300,000,000. Just that consideration by itself points up the inadequacy of our present budgetary approach.

COMPARATIVE BUDGET TABLE

Senator CHAVEZ. Would you care to make a statement of your own?

Dr. CAMERON. I have offered this for the record and I will say that my function this morning will be twofold: to introduce these witnesses who represent briefly the story of cancer research from the point of view of the progress which has been made since large Government appropriations became available for this purpose and to present Mr. Adams' statement and to offer a few comments of my own.

These statements and this testimony are based upon the budget which is proposed by the American Cancer Society, which I would like to put before you.

Mr. Adams' statement is offered from the point of view of that of a businessman with wide experience.

(The material referred to follows:)

NATIONAL CANCER INSTITUTE

Comparison of 1952 appropriation, 1953 President's budget, and 1953 American Cancer Society recommended budget

	1952 citizens budget	1952 appropriation	1953 President's budget	1953 American Cancer Society recommended budget
GRANTS				
1. Grants to medical and dental schools and other institutions and to individuals for research and training:				
(a) Research projects	$4,800,000	$3,100,000	$3,100,000	$4,900,000
(b) Research fellowships	750,000	500,000	500,000	750,000
(c) Institutional grants	1,000,000			1,000,000
(d) Biological effects of high-energy radium	500,000			500,000
(e) Investigation of cancer-cure claims	200,000			200,000
(f) Construction of research facilities:				
Contract authority	9,000,000			5,000,000
Liquidation cash	4,825,000			
(g) Teaching of medical subjects	2,100,000	2,040,000	2,040,000	2,225,000
(h) Training stipends	500,000	375,000	375,000	500,000
2. Grants to States for detection, diagnosis, and other control services	3,500,000	3,100,000	3,100,000	3,100,000
3. Grants for special-control projects	1,000,000	900,000	750,000	1,000,000
Total grants	28,175,000	10,015,000	9,865,000	19,175,000
DIRECT OPERATIONS				
1. Research	3,909,000			
Basic		4,137,000	4,012,000	4,261,000
Clinical center			688,000	1,437,000
Total research	3,909,000	4,137,000	4,700,000	5,698,000
2. Other direct operations:				
(a) Technical assistance to States	465,000	415,000	378,000	490,000
(b) Review and approval of grants	83,000	85,000	78,000	87,000
(c) Administration	350,000	354,000	350,000	375,000
Total direct operations	4,807,000	4,991,000	5,505,000	6,650,000
Total obligations	32,982,000	15,006,000	15,371,000	25,825,000
Adjustments (transfers out)		69,000		
Contract authority for construction of research facilities	−9,000,000			−5,000,000
Liquidation cash for construction of research facilities	−4,825,000	4,625,000		
Total obligational cash	19,157,000	19,700,000	15,371,000	20,825,000

REQUEST FOR ITEMS EXCLUDED IN 1953 BUDGET

Senator CHAVEZ. Will you kindly identify him?

Dr. CAMERON. He is chairman of the executive committee of the American Cancer Society and a partner in the banking firm of Lazard Frères in New York. In substance, his statement recognizes the need for reduction in Government spending, but not in the area of cancer control and research.

Having submitted his statement, I should like to call attention to two items of the budget proposed by the American Cancer Society

for the fiscal year 1953 which are not included at all in the Executive budget.

Senator CHAVEZ. Let me stop you there.

The 1952 item or appropriation was $19,500,000. The estimate for 1953 is $15,371,000, or $1,129,000 less than last year's appropriation.

Dr. CAMERON. This listing under 1 (c) I am referring to, institutional grants, in the Cancer Society's budget, is $1 million, and 1 (f), construction of research facilities, is $5 million. The reasons for recommending the $5 million to be included in the budget for the fiscal year 1953 are somewhat as follows:

INSTITUTIONAL GRANTS

Several years ago the Congress realized the necessity of broadening the cancer research program and permitting the effective utilization of scientists who were then being trained to carry on cancer research and that it depended in large measure in an increase in the number of cancer research facilities which extended in the country, and so long ago as 1947 and 1948, when the program was originally conceived it appeared that the sum of $25 million, and we are now talking about $25 million 1948 dollars, was the least amount which would provide reasonably adequate expansion of the cancer research facilities of the country.

Senator CHAVEZ. Are those facilities public or are there some that are private facilities?

Dr. CAMERON. For the most part, Senator, they are private facilities. They have units which have been established in existing university establishments.

CONSTRUCTION OF RESEARCH FACILITIES

For the fiscal years 1948, 1949, and 1950, the Congress appropriated $16,303,000 of the $25,000,000 total figure, but it has made no appropriations for construction in the fiscal years 1951 and 1952, and as stated previously, there is no provision in the present Executive budget for that purpose.

This $16 million has been allocated to 35 different construction units in 47 institutions in 27 States. Twenty-nine of these buildings have been completed and others will be completed during the fiscal year 1953.

It is estimated that this $16 million which you have proposed previously has made it possible for the institutions themselves to raise an additional $100 million for the construction program from private sources and from university appropriations.

In other words, each Government dollar has been multiplied by six and construction costing nearly $120 million has resulted from the Federal appropriation of $16 million.

Senator ECTON. Doctor, are these institutional grants based on the guarantee of the institution authorities that they will match Government money six to one?

Dr. CAMERON. No, there is no such provision. This is just a natural consequence of the availability of the catalytic nature of funds of this sort.

Senator CHAVEZ. This was the result?

Dr. CAMERON. Yes, a dividend which was anticipated, but not foreseen in this extent.

REQUESTS FOR CONSTRUCTION GRANTS

There are on file at the moment firm requests from institutions for construction grants totaling more than $8 million. Many of the grants originally made were substantially scaled down and requests for supplements to grants are now on file from 24 institutions for an additional total of $8,500,000.

Thus there are now pending 53 firm requests for $16,500,000.

In addition, 30 other institutions have signified their intention of applying for construction grants if and when appropriations are again made for this purpose.

We recommend that the Congress now reinstate the construction program, and that it authorize $5 million of contract authority for the fiscal year 1953. This would leave unauthorized approximately an additional $3,700,000 from the original estimated amount of $25 million in 1947.

RESEARCH GRANTS

One final word as to the institutional research grants. We have been talking about construction. By and large the National Cancer Institute supports cancer research in institutions around the country solely on a project basis. That is, the individual scientist who proposes to carry out some very definite work must submit a description of a specific project which is well enough advanced so that it can be described with a good deal of particularity. It is a very definitely circumscribed program he is entering upon. This is not the only way to invite research activity and to support it.

About 4 years ago, the American Cancer Society, in addition to spending its research money via this project system, began to spend money according to a formula which we call institutional grants and on this principle relatively large amounts of money are given to a relatively few institutions, usually specialized institutions dealing with cancer, or universities which have well-established research programs under way.

Senator CHAVEZ. And facilities.

Dr. CAMERON. And facilities and manpower, although not heretofore particularly identified with cancer.

This idea of the institutional grant is to bring together into a common focus the many disciplines of science within the university to work on this common problem of cancer.

We have succeeded in doing that in 30 institutions in the country. We feel that it provides a medium of research activity which is not afforded by projects on an individual basis.

Senator CHAVEZ. Would these grants to institutions go to basic research of all types?

Dr. CAMERON. The program of cancer research as it develops in an institution and under institutional grants is usually broader than that, Senator. One of the happy dividends of the institutional grant is bringing together the laboratory men and the clinician.

It is this cooperative effort of people who are treating cancer on the one hand, and men who are concerned with the basic problems of growth on the other, which we feel is going to shorten the time of transfer of fundamental information into clinical utility.

Senator ECTON. Then the institution submits their planned project to you for approval?

Dr. CAMERON. Yes, in broader terms and in less specific terms than the individual projects come in for approval. They say, "We are going to work on these phases of growth and cancer in the human being and we are going to bring these scientists into the picture."

They need so far as our program is concerned, much more than that because in the institutional grant we are following the principle which has been eulogized by President Conant. We are backing men and ideas rather than established records.

We feel this has been a genuine accomplishment, bringing together the fundamental scientists and the clinicians to work on these common problems and, moreover, we feel that it has brought into the cancer research picture the workers in particular scientific compartments who up to now have not been particularly concerned with this problem of growth.

It is our feeling that the program has produced so much that it needs substantial expansion and may well become a part of the program of the National Cancer Institute.

BUDGET PROPOSAL

To summarize then, we propose a budget of $20 million, $20,825,000, which includes $5 million of contract authority for the construction of research facilities.

The proposed executive budget is in the neighborhood of $15 million. In effect, then, this is the valuation made by the Federal Government through its executive branch on the problem of cancer as it affects 150 million people.

Senator CHAVEZ. Should we not get into the record at this point the fact that the recommendation of the American Cancer Society is only $1,125,000 more than was appropriated in 1952?

Dr. CAMERON. Than was appropriated in 1952?

Senator CHAVEZ. That is right.

Dr. CAMERON. That is a very happy suggestion.

Senator CHAVEZ. That includes additional matters to be looked into by the Public Health Service.

Dr. CAMERON. That includes additional matters to be looked into because it does not include the $5 million for construction authority.

Senator CHAVEZ. Say, for instance, in item D, a new item of $500,000 for a biological effect of high energy radium. You have a new item, investigation of cancer cure claims, $200,000.

Can you give us a brief statement on that?

INVESTIGATIONS OF CANCER CURE CLAIMS

Dr. CAMERON. I would like to point out I am sure the members of this body must be well acquainted with the need for an authority to investigate the many claims of cancer cures which come to public attention.

Senator CHAVEZ. In straight parlance, the phonies?

Dr. CAMERON. It is not quite that easy. There are claims made by bona fide scientists which are somewhat beyond the pale of orthodoxy which require the most careful kind of analysis.

We think we can recognize frank phonies when they walk down the street, but we cannot recognize the worthless cure which is wearing the vestments of scientific orthodoxy. That is what is so troublesome, what is so expensive, and what requires such painstaking analysis.

The herbs which come out of the hills of Tennessee do not take much of our time, but when a claim is made by a man with academic degrees who is licensed to practice medicine and graduated from a first-class medical school, then we are really put to it to study this carefully and to analyze his results and the experience of others.

This is essentially the purpose of this grant. There has been established within the framework of the National Research Council a committee known as the Committee on Cancer Diagnosis and Therapy. This committee consists of scientists and men who are well versed in clinical research, specifically brought together for the purpose of studying such claims of cancer cures as are brought before it by its supporting agencies.

This committee has been brought into being by the major medical and cancer interests of the country—the Damon Runyan Fund, the National Cancer Institute, the American Cancer Society, the American Medical Association, and it is regularly attended by representatives of the Pure Food and Drug Administration.

Senator CHAVEZ. Dr. Cameron, have you compared the figures as to the amount of funds spent by private sources as against those spent by public sources?

Dr. CAMERON. For this purpose?

Senator CHAVEZ. Yes.

Dr. CAMERON. I am sorry, I have not.

Senator ECTON. What portion of the funds is devoted to finding out the cause of cancer as well as the cure?

It seems to me that is just as important and maybe if we knew the causes, it might help to find a cure.

Dr. CAMERON. You are perfectly right. It is very important.

AMOUNT FOR INVESTIGATIONS

You will note that the operations of the National Cancer Institute for 1952 included $3,100,000 for research projects outside the Cancer Institute.

There is, of course, within the Cancer Institute, a very active cancer research program. The American Cancer Society, provides each year about three and three-quarter million dollars for the support of cancer research which is specifically designed to elucidate the fundamental causes of cancer and in addition improve methods of treatment.

There are funds from other sources—the Damon Runyan Fund, and the Atomic Energy Commission for its studies in biological research, includes funds which are directly related to the cancer problem.

There are other private foundations around the country which have been identified with research grants again for fundamental studies in the causes of cancer.

I would estimate that the total funds available today for this rather particular purpose come to about $16 million.

Senator CHAVEZ. Thank you, Dr. Cameron.

Did I understand you were going to introduce the next witness?

Dr. CAMERON. Yes, please.

But first, Mr. Chairman, I would like to supply my prepared statement for the record.

Senator CHAVEZ. It will be received.

(The statement referred to follows:)

STATEMENT OF CHARLES S. CAMERON, M. D., MEDICAL AND SCIENTIFIC DIRECTOR, AMERICAN CANCER SOCIETY, INC.

INVESTIGATIONS OF CANCER CURE CLAIMS

Nowhere in the United States can a man walk into a drug store and buy a sixteenth of a grain of morphine. That is against the law—and yet it is perfectly permissable for anyone with cancer to put himself in the hands of unscrupulous or misguided individuals who, although licensed to treat the sick by one method or another, offer perfectly worthless nostrums. Indeed the pastes, powders, and concoctions of these modernized mumbo-jumbo artists are more than worthless—they are lethal, for in electing them over bona fide treatment methods, the unwary or ignorant patient loses what was a respectable chance of being cured. No one knows how many lives are lost yearly as the result of such unscientific and dishonest cancer treatment, but in view of the known number of operators of phony cancer cures, and the volume of their trade, the number may be estimated conservatively at upwards of 10,000. It is astonishing that in these days which are generally regarded as enlightened and pervaded by the spirit of science, the acetylene lights of the medicine men still display their sorry cures. There is one way and only one of controlling them, and that is to prove their worthlessness beyond a doubt. This is not easy to do, particularly in the case of alleged cancer cures. It is a task to be undertaken only by competent and experienced physicians and scientists who not only know all there is to know about cancer, but who are thoroughly familiar with the methodology of scientific proof. At the same time, they must be unbiased as all good scientists are.

A body of such authorities has been established through the efforts of the National Cancer Institute, the American Cancer Society, the American Medical Association, the Pure Food and Drug Administration, and others. It is actually a subcommittee of the National Research Council of the National Academy of Sciences. Following a period of organization and definition of policy, it is now prepared to undertake the analysis and evaluation of such cancer cure claims as are presented to it by its sponsoring agencies. But it is clear that a select committee such as this, numbering eight, and consisting of members having other heavy responsibilities, cannot stand up to this problem unassisted. The present staff must be augmented, there must be provision for the temporary or part time services of appropriate technical and professional (specialist) experts, and, there must be a source of funds, wherewith to provide grants to clinics and institutions who will cooperate from time to time in the evaluation projects.

The effectiveness of the work of this subcommittee will be determined directly by its resources; and if the Congress, with its responsibilities for the welfare of the citizens it represents, is concerned to take forthright steps to effectively limit their exposure to cancer treatment of no or questionable value, I urge that it make those resources available.

GRANTS TO STATES FOR PROGRAMS OF CANCER CONTROL

There is no disease of comparable magnitude in terms of mortality, long-term invalidism, economic loss and social burden, so susceptible of immediate and substantial relief as cancer is. The purpose of the program of cancer control as conducted by governmental and voluntary agencies is to achieve this potential of relief through (1) universal application of the methods of education, lay and professional, whereby early diagnosis will become the rule rather than the exception, and (2) improvement of professional services to cancer patients whereby adequate treatment will be made readily available to all.

Six years ago, at the inception of the National Cancer Institute's program of grants-in-aid to States, there were but six State health departments engaged in major cancer-control activities; elsewhere the voluntary agency (the American Cancer Society) was bearing the burden virtually alone. The State grant-in-aid program has, during these 6 years, succeeded in bringing one State health department after another into the vanguard of cancer control, so that today some kind of effort is being made by all of them, and in most of them the effort is comprehensive. Another way of viewing the accomplishment of this program is to point out that on the basis of the matching formula, whereby each Federal dollar is joined by 2 dollars of the State, the National Cancer Institute's $3,100,000 has actually purchased 9,300,000 dollars' worth of cancer control.

I submit a summary of States cancer control activities for the 1952 fiscal year as contained in program plans submitted to the National Cancer Institute cancer-control branch. Probably the most important phase of each cancer-control program is the manner in which it is organized and correlated with other participating groups outside of the State and local health departments. The records show that 36 States described having some form of coordinating or advisory cancer committee; 5 of these are either appointed or approved by the Governor of the State. In 13 States, the State medical society or the cancer committee of the medical society serves as a coordinating or advisory committee to the State health department; 11 States have representatives from the State medical society, the State division of the American Cancer Society at the State health department as members of the cancer advisory committee. The manner in which these committees are used in formulating, organizing, and supervising the activities of the State control program is so variable that they cannot be properly summarized. The remaining States have no uniformity insofar as representative adivsory groups are concerned. The most important phase of the program insofar as the State health department programs are concerned is the availability of administrative personnel to conduct the cancer control program; 8 States and 1 Territory have a full-time medical cancer control director (California, Connecticut, Iowa, New Jersey, New York, Pennsylvania, Texas, Virginia, Puerto Rico); 35 have directors responsible for 2 to 8 programs, in addition to cancer control. Of this group, three positions are vacant and four have part-time directors; two States have not designated anyone specifically responsible for cancer-control activities. Only 11 States have nurses specifically assigned to cancer-control activities. These States have a total of 14¾ nurses, 6¼ social workers are employed in 7 of the States; 6 States employ 11½ laboratory technicians; 3 States employ 5 X-ray technicians; 7 States have statisticians responsible for cancer-control activities; 5 States employ 5 health educators; 1 State employs 2 engineers in the cancer-control program.

Morbidity.—A total of 34 States have indicated that they have some form of morbidity program; 22 of these list this as a maximum effort activity; in 3 States this activity is in a division other than cancer control.

Mortality.—Thirty-five States say they have a mortality register program; 19 of these list this as a major activity. In 5 States the program is in a division other than cancer control.

Tumor registers.—Twenty-nine States list a tumor-register program. It is believed that this does not represent the true status of this program but a misinterpretation on the part of the State health department.

Education.—In the field of education, 49 States indicate that they conduct some form of lay educational program for adults. This program is given maximum effort by health departments in 7 States, medium effort in 26, and minimum attention in 16. A division other than cancer control conducts the program in 15 States, the division of health education in 11 of these; 38 States report an educational program for public schools. None of the States give this program maximum attention. This activity is also conducted by a division other than cancer control in 11 of the States; 13 States list no program for schools.

Professional education.—All 52 States and Territories participate in some form of professional education for physicians; 24 list this as a maximum activity, 19 as a medium, and 9 as minimum. In 5 States the program is conducted by a division other than cancer control; 49 States conduct an educational program for dentists. In 5 States it is a major activity, in 15 medium, and 30 minimum; 50 States claim an educational program for nurses. In 5 States a major activity, 16 medium, 20 minimum; 3 States have no program for nurses; 19 States list an educational program for pharmacists.

Bedside care.—There is a bedside nursing-care program in 20 States. This program is provided on a demonstration basis in practically all of these States.

Follow-up activities.—Follow-up services are provided by 38 State or local health departments. This is a maximum effort in only 11, medium in 13, and minimum in 23.

Medical consultation service.—Medical consultation services are available in 26 States, social service in 22. Medical consultation service is given maximum attention in only one State.

Cooperation with State or voluntary agencies.—All of the 52 States and Territories indicate that they cooperate with voluntary agencies. In 26 States it is listed as a major activity.

Miscroscopic tissue examination.—There is a tissue diagnostic program in 34 States, listed as a major activity in 14, medium in 7, minimum in 13.

Cytologic test service.—Cytological test services are listed in 27 States, a major activity in 6.

Cancer detection.—Twenty State health departments participate in a cancer-detection program, listed as a major activity in 8 States.

Cancer diagnostic clinics.—Thirty-four States participate in a cancer diagnostic clinic program, listed as a maximum activity in 17.

Cancer clinics.—Twenty-eight States participate in a cancer-clinic program, a major activity in 16.

Cancer hospitals.—Cancer hospitals are operated in 6 States (Massachusetts, Mississippi, New York, Texas, Vermont, and Puerto Rico).

Diagnosis and treatment.—A service for diagnosis and treatment of cancer patients in general hospitals is provided in 25 States, 14 of these listed as a major activity.

Palliative care.—Palliative care in hospitals, nursing homes, etc., is provided by 16 State health departments, listed as a major activity in only 1.

Practically all of these activities are directly related to the State cancer grant-in-aid program which has been in operation since 1946.

MEDICAL AND DENTAL SCHOOL CANCER TEACHING PROGRAM

In the United States, modern medical science has all but eliminated deaths from a variety of diseases which so recently as 30 years ago were widespread causes of death. Tuberculosis, at the turn of the century taking more lives than any other disease and called the white plague, is now in eighth place in mortality records. Pneumonia, taking the life of 1 in every 3 or 4 it affected, and called Captain of the Men of Death so recently as 15 years ago, has now a mortality of about 8 percent. Typhoid fever, not long ago frequently encountered in medical practice, is now a disgrace in any community. Infectious diseases of childhood and nutritional deficiency diseases are now rarely seen on death certificates. Until 20 years ago pernicious anemia and diabetes led inexorably to an early grave, but today their victims can look forward to a normal span of years. These accomplishments are not an unmixed blessing, however, for by increasing the longevity of our people—the life expectancy for men is now 67 years and for women, 70 years—we have created new health problems: Disease of the heart—vascular system and cancer—have emerged as the foremost causes of death. Thus the pattern of disease has changed almost in a generation. One important effect of this change has been the need to reexamine the curriculum of medical school teaching and to adjust it accordingly, putting the new first things first.

Cancer's position today as the second cause of death among our people would logically accord it a position of greater importance in the teaching plan, and, in an effort to facilitate its reorientation, the National Cancer Institute in 1947 offered each accredited medical school a teaching grant of $25,000, and each dental school a grant of $5,000. During the current year, all of the country's 79 approved schools of medicine are availing themselves of this assistance, as are 39 of the 42 dental schools. These grants have had two effects already discernible: (1) In general, greater emphasis is being placed upon cancer in both the laboratory and clinical departments of medical instruction and (2) the presentation of this excessively complex and varied subject is being integrated into an intelligible whole, as compared to the former piecemeal, fragmented approach. While uniformity of cancer teaching programs in the many medical schools is not sought, still there is noted today an approach to agreement on certain elemental principles of teaching. Group study of methodology is the purpose of an informal organization of the coordinators of cancer teaching who now meet together regularly.

It is unnecessary to remark that the present annual crop of medical and dental school graduates is better prepared to effectively engage cancer in their careers of practice than their predecessors were, a fact for which their patients can be thankful and for which the Congress can be proud. Continuation of these grants, certainly during the present phase of adjustment, is recommended.

CLINICAL TRAINEESHIPS

The modern methods of treating cancer successfully require high orders of knowledge, experience, and enterprise. Dr. Rhoads has described, as only he can, the heroic proportions of present-day surgery. The ability to perform surgery of the magnitude necessary to extirpate many cancers is not acquired in a year or two, but only after rigorous training of 4 and 5 years. The technique of treating cancer radiologically cannot be learned in 2 years as the limited modalities of 10 years ago were; the safe use of X-rays generated at 1 and 2 million volts, the proper control of high energy beams of the betatron and the cyclosynchrotron, the effective employment of a variety of radioactive isotopes—all these must now be embraced in the training of young radiologists who are to treat cancer—and that training, again, is long and exacting. The shortage of pathologists in our country is acute—there are fewer than 2,000 certified by the American Board of Pathology—yet precise microscopic diagnosis of cancer is the keystone of everything we do about it.

The objective of the program of clinical traineeships offered by the National Cancer Institute is to increase the number of physicians qualified to suspect, diagnose, and treat cancer. The program has been in operation since 1938, and during these 13 years, 343 young men and women have had the advantage of study, observation, and clinical exercise related to cancer and the allied diseases, which they would not otherwise have had. At this moment 106 young physicians are in the course of hospital and clinic training emphasizing cancer detection, diagnosis, and treatment; they are at work in 52 hospitals located in 20 States. May I emphasize this fact, that for these 106 opportunities there were 156 applicants. With the growing recognition of cancer's increasing importance as a medical problem, and recalling that if present rates of increase continue we shall be faced 50 years hence with nearly twice as many cancer patients as we have today, foresight commends reasonable expansion of the present training program.

GRANTS FOR SPECIAL CONTROL PROJECTS

The part of the National Cancer Institute's activity designated "Grants for special control projects" is a program of grants-in-aid which makes possible a large variety of endeavors which may best be described as developmental. The special control grants support direct efforts to establish new methods of controlling cancer and of improving, refining, and rendering more effective the already established method of control. They cover the fields of public education, professional education, diagnosis, treatment, statistical studies, and environmental cancer research.

I offer the following examples of projects currently underway and supported by special control grants of the National Cancer Institute:

(1) Investigation of the incidence of cancer in the population of the Colorado Plateau. The residents of this region are employed largely in the mining and processing of ores which are radioactive.

(2) Analysis of the causes of death in Ohio in relation to employment. The objective here is to determine what if any cancer-causing hazards are presented in the rubber industry.

(3) The support of cancer teaching programs in schools of public health, such as Harvard, Yale, and Michigan, in order to qualify health educators and public-health administrators in the special techniques of cancer control.

(4) The production of a series of motion-picture films for physicians, which illustrate the office practice methods to be employed in arriving at the earliest possible diagnosis of cancer. Four of these have been produced to date, and because they represent a departure in film-teaching technique, giving attention only to those phases of cancer management which are of practical significance to the doctor who sees cancer first, they have achieved gratifying usefulness and distinction. In support of this statement, I submit the review of the most recent film in the series.

Uterine Cancer: The Problem of Early Diagnosis, which was prepared by the American Medical Association and published in its journal dated, February 2, 1953: "Uterine Cancer: The Problem of Early Diagnosis: 16 mm., color, sound, showing time 20 minutes. Sponsored by the American Cancer Society and the National Cancer Institute. Produced in 1951 by Audio Productions, Inc., New York. Procurable on purchase from the American Cancer Society, 47 Beaver Street, New York, or on loan from State cancer societies and State health departments.

"The incidence of cancer of various sites in the female genital tract (international classification) is given, with survival rates indicated for each. Symptomatology and aids in diagnosis are visually presented in animated drawings for each stage of cervical cancer, including stage O. The role of cytology in early detection is stressed, its technique visually described, and diagnostic criteria illustrated. Dr. Papanicolaou sounds a note of caution in using the method in diagnosis, by indicating that a positive smear should be confirmed as a matter of routine by biopsy and tissue diagnosis. The Schiller test and methods of biopsy are included.

"The film calls attention to the importance of a complete physical examination, bimanual examination, visual inspection of the cervix, rectal examination, and aspiration of the cul de sac, together with this very simple method of securing cells from the cervical canal. Several case reports are shown to illustrate these points. It is presented entirely from the standpoint of early diagnosis of uterine malignancy. It does not include a discussion of treatment. The picture is well organized. The photography, animation, and narration are excellent, and the film is highly recommended for the general practitioner, the advanced medical student, and hospital-staff meetings."

(5) Studies of the role of heredity and of the milk virus in the development of human cancer of the breast.

(6) Analysis of the effect of an intensive State-wide program (Iowa) of breast-cancer control through examination of their own breasts by statistically significant numbers of women and employing the National Cancer Institute-American Cancer Society film "Breast Self-Examination."

(7) Investigation of variations in the incidence of cancer among the ethnic groups of Hawaii.

The examples I have given represent one-tenth of the total number of projects now underway. The cost of this program is $986,123.

In consideration of the immediate and practical dividends likely to be derived from this program, its contaiinuance undiminished is recommended. Accordingly $1,000,000 for this purpose is the proposal of the American Cancer Society.

Cancer control program, States and Territories, related to Federal grants-in-aid, 1952

Education, professional	52
Education, lay	49
Follow-up	38
Mortality register	35
Morbidity reporting	34
Diagnostic clinics	34
Tissue diagnosis	34
Cancer clincs	28
Cytologic diagnosis	27
Medical consultation	26
Hospital, diagnosis, and treatment	25
Bedside nursing care	20
Cancer detection	20
Terminal care	16
Personnel:	
Director, responsible for other programs	35
Nurses	11
Laboratory technicians	9
Medical director, full time	8
Social service workers	7
Statisticians	7
Health education	5

Dr. CAMERON. I would like to introduce Dr. James P. King, if that is agreeable.

Dr. King is chief resident physician in tumor therapy, Children's Cancer Research Foundation in Boston.

Dr. King is affiliated with Dr. Farber and has been designated by him to present his testimony.

Senator CHAVEZ. I understand, though, you are in charge of the time of all of the witnesses.

Dr. CAMERON. Yes, sir.

Senator CHAVEZ. We will hear Dr. King.

Dr. CAMERON. Thank you, sir.

May I say I am asking Dr. King to present this evidence directly because he would like to show some lantern slides which will tell the story of the progress being made. He will show you accomplishments which were not possible 5 years ago. I thought it would answer questions like you raise, Senator Ecton, very effectively and in a shorter time.

Senator CHAVEZ. The committee will listen to Dr. King.

SUPPORT OF NATIONAL CANCER INSTITUTE PROGRAM

STATEMENT OF DR. JAMES P. KING, CHILDREN'S CANCER RESEARCH FOUNDATION, CHILDREN'S MEDICAL CENTER, BOSTON, MASS.

Dr. KING. Dr. Farber regrets exceedingly that he could not be here today. He asked me to present this statement for the record.

He had to be in Los Angeles on a medical and research mission.

Senator CHAVEZ. It may be included in the record at this point.

(The statement referred to follows:)

STATEMENT OF DR. SIDNEY FARBER, PROFESSOR OF PATHOLOGY, HARVARD MEDICAL SCHOOL AT THE CHILDREN'S HOSPITAL, AND SCIENTIFIC DIRECTOR OF THE CHILDREN'S CANCER RESEARCH FOUNDATION (CONSULTANT TO THE ARMED FORCES INSTITUTE OF PATHOLOGY, THE NATIONAL CANCER INSTITUTE, ETC.)

(Presented by Dr. James P. King, Chief Resident in Tumor Therapy, the Children's Cancer Research Foundation and the Children's Medical Center.)

It is a privilege to join Mr. James Adams and Drs. Rhoads, Jacobson, and Cameron in the presentation of evidence before this committee. In support of the plea for greater support from the Federal Government for cancer research and for funds for research fellowships and institutional grants, I should like to present an illustration from one of the fields of cancer research which holds great promise. This concerns the status of chemotherapy, or the use of chemical substances in the treatment of cancer which is beyond the reach of surgical or radiological techniques either because the cancer is widespread because it has been discovered too late, or because the cancer is of such nature that it is disseminated throughout the body, as for example, leukemia or lymphosarcomatosis.

CHEMOTHERAPY OF DISSEMINATED CANCER

The use of chemicals in the treatment of widespread cancer, incurable by surgical or radiological techniques, has long been a dream of scientists. By 1945 the sum total of research contributions based upon patient, hard work as well as inspired thinking on the part of scientists in many different fields, including chemistry, physics, nutrition, hematology, experimental pathology, pharmacology, made possible the first chemical treatment of "incurable" cancer with results of temporary value to the patient. Such basic research has been carried on for many years in the National Cancer Institute of the National Institutes of Health. Here was undertaken a pioneer program in the testing of chemical compourds on tumors grown experimentally in mice. In the National Cancer Insti-

tute also the basic disciplines of experimental pathology, genetics, biochemistry, tissue culture, biophysics, and experimental pharmacology have been responsible for fundamental information of the greatest importance to the ultimate solution of the problem of cancer in man. Private institutions supported by funds from individuals, or from private organizations such as the American Cancer Society, as well as Federal funds through the National Cancer Institute have created research programs on a broad scale extending from the fundamental laboratories to the patient along many lines of attack including chemotherapy. Institutions of this kind are represented here today: The Memorial Cancer Center headed by a pioneer in the field of chemotherapy of cancer, my colleague Dr. Cornelius Rhoads, and the Cancer Research Insitute of the University of Chicago, represented by Dr. Leon Jacobson. In our own experience Federal funds through the National Cancer Institute permitted the development of a research program which attracted private support leading to the creation of the Children's Cancer Research Foundation.

TYPES OF RESEARCH REQUIRED BEFORE A CHEMICAL MAY BE USED ON A PATIENT

It may be of interest to summarize briefly what kind of work must take place before a chemical can be given to a patient with incurable cancer. Two general methods of attack may be employed. The first includes a careful testing of known chemical compounds by the hundreds and thousands against experimentally induced tumors in mice, or against tumor tissue grown under artificial conditions in the chick embryo or the tissue culture. The first intensive programs of this kind have been carried on for more than 6 years in the Sloan-Kettering Institute under Dr. Rhoads and at the National Cancer Institute by Dr. M. J. Shear. Today pharmaceutical industry and a number of private and public research institutions have embarked upon similar programs.

The second method is based upon theoretical considerations which lead the investigator to synthesize new compounds which it is hoped will possess cancer-destroying powers. Whichever path is used, the chemical compound must then be tested for evidence of biological activity by the methods of microbiology, or by more direct methods which give evidence of cancer-destroying activity against experimentally induced tumors in the mouse. Such active compounds are then studied carefully for toxic properties and for clues to their mechanism of action against the cancer cell and against the animal body in several species. The importance of such toxicological and pharmacological study lies in the fact that some chemical compounds, while cancer-destroying, have a greater toxic effect on the body than on the cancer, or may cause important damage to the kidneys, the liver, the brain and to other organs, in addition to the cancer.

Finally, after these studies which may take from 6 months to 2 years following the synthesis, the new chemical compound is administered with great care to the patient with incurable cancer. It should be made clear that research in the popular sense of the term, is not conducted on the human patient. These new forms of treatment, are given only as part of the total care to the patient with widespread cancer and primarily for the good of the patient. A special critical ability is required of the doctors who do this kind of work and they must have great experience with the life history and biologic behavior of tumors. Conclusions concerning the effectiveness of chemicals on cancer in man are difficult to achieve. Months, and even years, must pass by before a critical evaluation is possible. Progress in the synthesis of new cancer-destroying chemicals in the research laboratories has been great since chemotherapy of human cancer became an actuality in the past 7 years. Adequate facilities or the expert medical teams for carrying out critical studies of this kind are so few that we are faced with the remarkable but sad situation of having more chemical compounds available, carefully studied in the laboratory, then have been administered adequately under proper conditions to humans with incurable cancer. It is impossible to decide from observations on animals and test objects used in the laboratory alone whether a chemical compound will be effective in man. Final conclusions can be drawn only from observations on man.

SOME RESULTS OF CHEMOTHERAPY

There are available today a number of classes of chemical compounds which are of great interest and even importance in the treatment of patients with incurable cancer. These include nitrogen mustard, used so effectively by my colleagues Dr. Leon Jacobsen and Dr. Rhoads in their institutions, a group of

folic acid antagonists, such as aminopterin, compounds such as triethylenemelamine and related compounds, and others which will be considered by some of my colleagues. Some examples will be given.

THE TREATMENT OF ACUTE LEUKEMIA IN CHILDREN

Until 1947 the usual period of survival in children with acute leukemia was under 1 year; most children died within a few weeks to a few months after proved onset of this form of cancer. There is still no cure. Great strides, however, have been made. In 1947 a new direction of research resting heavily upon the contributions of the past led to the use of chemicals newly synthesized by the research workers of the Lederle Laboratories (folic acid antagonists). These produced great improvement in about two-thirds of the children with acute leukemia treated. We have just reviewed experience of the Children's Cancer Research Foundation in Boston for the Second National Cancer Research Conference held in Cincinnati March 3, 4, 5, 1952. Of 315 children with acute leukemia treated in the last 4 years, important improvement and increase in survival period have been produced in approximately two-thirds. Comparable results have now been obtained in several institutions in this country. We are happy to report now that a boy of 6 has been in constant remission for 29 months; that a girl of 9 is alive 36 months after the onset, and that 1 boy of 11 is in school and playing actively in sports 37 months after the appearance of the leukemic cancer.

Because of the eventual resistance on the part of the cancer cell to these chemicals, we describe these effects as temporary in nature. If research now in progress could produce a means of overcoming the resistance of these cancer cells to the very chemical compounds to which they had once responded so well, we would have available in these folic acid antagonists for use in the treatment of acute leukemia a chemical which could be compared in value to that of insulin in the treatment of diabetes.

CHEMOTHERAPY IN OTHER FORMS OF CANCER

Chemical agents administered as part of the total care to patients with many other forms of incurable cancer have produced temporary effects varying from weeks to months, and in some instances up to 4 years beyond the expected survival period. Encouraging results on adults and children have been reported from a number of clinics in this country. These include patients with Hodgkin's disease, chronic leukemia, lymphosarcoma, neuroblastoma, embryoma of the kidney, certain brain tumors, some cancers of the breast, the bladder, and the prostate, and even hopeless cancers such as those arising in skeletal muscle. Pain has been reduced or obliterated, increased survival has been produced, and in many instances a state approaching the normal in health has been achieved for months or longer. There are no cures. Life, however, has been made more bearable and patients whose lives are prolonged may be alive to take advantage of the next important discovery. Evidence is at hand to permit a restrained optimism concerning greater results. The details of these experiences in a number of institutions give evidence for the conviction that we have entered a new era in the history of cancer research and treatment.

PRESENT NEEDS

We urge that more support is required for basic research concerning: (1) The mechanism of action of chemical compounds, (2) a search for new chemical compounds, (3) the discovery of means of overcoming resistance on the part of the cancer cell to the chemical compounds, and (4) efforts to find a direct, rapid method of ascertaining whether a chemical compound may have cancer destroying powers of interest to the human. Apart from this great need for support of basic research, such as that now being carried out at the National Cancer Institute and in many public places and private institutions in this country, there is grave and immediate need for funds so that the chemical compounds now available or soon to be made available may be applied to man under proper conditions. The cost of the hospital care required by patients with widespread cancer, receiving a chemical compound, varies from $20 to $30 a day in different parts of the country. The number of doctors, nurses, and medical workers trained to carry on this kind of work on the patient with incurable cancer is too small to meet the requirements of this opportunity for rapid progress. Research fellowships are urgently required for the training

of doctors in this new kind of work. The value of institutional grants as advocated by Mr. James Adams, and grants for the support of research beds cannot be measured in terms of dollars alone. Such grants give freedom for rapid progress which would be impossible under more restricted conditions. May I speak too in unqualified terms for the support of the far-reaching research contributions of the National Cancer Institute in Bethesda and for the logical extension of its program in the application of the results of its research for the benefit of the patient with cancer.

SUMMARIZING STATEMENT

The dreams of doctors and scientists for chemical agents which might have at least some effect upon incurable cancer in man have been realized. More than 20 chemical compounds have at least a temporary effect upon widespread cancer of several different unrelated kinds both in adults and children. This achievement rests upon the solid work of those in the basic disciplines in many different fields. Now on the basis of actual accomplishment with new techniques acceleration of work in the basic aspects in the chemotherapy of cancer must be made possible. Furthermore, more rapid progress in the application of these chemical compounds to the patient with incurable cancer will be impossible until more facilities are made available in this country for the care and study of these patients according to the pattern laid down in the handful of institutions in this country. Brains and talent are to be found in all parts of our country.

It is gratifying indeed to be able to state on the basis of the experience of the last few years that one more important direction of research leading to what promises to be effective therapy of incurable cancer has been demonstrated. It is earnestly hoped by all who have knowledge in this field that this direction will be explored without delay to the full extent of our public and private resources.

RESEARCH FELLOWSHIPS IN CHEMICAL CURE OF CANCER

Dr. KING. Briefly, his plea is for Federal support of cancer research, for institutional grants, and research fellowships on the basis of some of the accomplishments that had been made through one of the fields, namely, chemotherapy.

Prior to 1945 there was very little, if anything, available in the way of chemotherapy for the treatment of cancer.

Senator CHAVEZ. Will you kindly explain to the two Senators present in simple language what you have in mind?

Dr. KING. The use of chemical compounds which would in some way affect, at least temporarily, the malignant process, retard it or destroy it.

USE OF DRUGS IN CANCER CURE

By 1945 through basic developments that had been carried on in many basic fields, such as physics, chemistry, biochemistry, at such places as the National Cancer Institute in Bethesda, enough information had been accumulated for the development of certain drugs that were known to be toxic to cancer cells.

The process of applying these drugs to man is an extremely complex one in that critical and expensive studies, both from the basis of their action in the body in regard to toxic properties, as well as therapeutic properties have to be carried on by the application to man.

Yet the final criterion is their effect in man because the results that are found in animals are not always applicable to man.

As a result, by 1945 a few of these drugs were available. There are available today such drugs as nitrogen mustard, which Dr. Rhoads

and Dr. Jacobson have used in their institutions widely. Another group of compounds is called the folic acid antagonist of which an example is aminopterin.

Senator CHAVEZ. Have you sufficient supplies that they might be used generally, or, are they limited?

Dr. KING. The supplies are now quite adequate due both to the Federal funds allowing their development and also private support, such as from private individuals, the American Cancer Society, or pharmaceutical houses.

For instance, the folic-acid antagonist has been developed at the Lederle Laboratories. I believe they are about to be approved or have been approved by the Federal Food and Drug Administration.

We would like to show some of the effect on cancer in an adult. This is a slide on the screen of a man sent by one of the leading surgeons in Boston after a diagnosis of one of the most malignant tumors that is known. The man had extensive involvement of the scalp. The man had a cancer on his lip. His left nostril was also occluded by tumor tissue. That was in November of last year.

By the middle of January, in the lower picture, all evidence of the tumor had disappeared. As of now, March, 2 months later, there is still no evidence of recurrence.

Senator CHAVEZ. Was that the result of the application of drugs or was any surgeory involved?

Dr. KING. This is one of the difficulties and the need for extensive clinical application of these drugs. This cannot be accepted as a definite effect of the drug. It has to be repeated in many patients with the same tumor with the same drug in order for it to be accepted as a therapeutic effect.

On this slide this is a little baby 6 months old who came to us at the age of 3 months with extensive involvement by another very malignant tumor. He had involvement of his liver and bone. The course of a tumor like this in such a child is approximately 5 to 9 weeks after bone involvement. He received X-ray therapy treatment to his liver to knock out that involvement and then received chemotherapy.

He is now 3 years old. There is no evidence of a tumor and he is quite normal.

CANCER OF THE BLOOD

One of the biggest problems which we have is acute leukemia which occurs mainly in children, but also occurs in adults. Prior to 1947 once a diagnosis was made at the onset of the symptoms of acute leukemia, the average length of life was well under a year, and usually a matter of a few weeks to a few months.

Since the advent of chemotherapy with the folic acid antagonist, improvement of moderate, to a marked degree, occurs in two-thirds of these children.

The next two slides show a little of the problems with which we are confronted.

Senator CHAVEZ. That is not the same baby there?

Dr. KING. No, sir. This is a child with acute leukemia who has extensive involvement with tumor tissue and extensive bleeding.

The next slide shows some of the bleeding problems.

The next slide shows a child from Virginia who is now 29 months from the onset of his leukemia. He is quite well and for all apparent purposes has no evidence of leukemia.

Senator CHAVEZ. Doctor, what about the left arm on the child on the right-hand side of the picture?

Dr. KING. It is the same child, but just two different views. His arm is absolutely normal. He has been coming to us for 29 months. We know from past experience sooner or later leukemia will appear, but results like this were unheard of before 1947.

The next slide is George, who is now 37 months from the time he came to us. He goes to school and is an avid figure skater.

The next slide shows what can be done. This is a little girl who came to us early in 1948 at the time chemotherapy was just beginning. She was admitted with severe anemia and in the enlarged liver and spleen stage. Six weeks later she left the hospital quite well and able to attend school. Unfortunately, 5 months later she died of a cerebral hemorrhage, due to recurrence of the leukemia.

Senator CHAVEZ. Is that the result of leukemia?

Dr. KING. Yes; the symptoms returned as they have in every case so far. It is results like these which Dr. Farber feels it is not only justifiable to continue research efforts on and enlarge them along this field, but at least for those of us that have seen them it becomes mandatory.

Senator CHAVEZ. Dr. Cameron, do we have figures here as to the number of cancer cases that we might have throughout the country?

CANCER STATISTICS

Dr. CAMERON. Yes; we have, sir. At any time we estimate there are about 650,000 patients living with cancer. There are about 315,000 deaths which occurred last year as the result of cancer.

Senator CHAVEZ. Thank you, Doctor.

Dr. CAMERON. May I say further, this is an important problem in children. Cancer is the leading cause of death among children between the ages of 5 and 19, with the exception of accidents, and a large proportion of those are due to leukemia.

Senator CHAVEZ. Is there anything further, Dr. Cameron?

Dr. KING. I think that is all.

Senator CHAVEZ. The next witness, please.

Dr. CAMERON. We now have Dr. Leon Jacobson.

Senator CHAVEZ. We will be glad to hear from you, Doctor.

SUPPORT OF NATIONAL CANCER INSTITUTE RESEARCH PROGRAM

STATEMENT OF DR. LEON JACOBSON, PROFESSOR OF MEDICINE, DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF CHICAGO, CHICAGO, ILL.

Dr. JACOBSON. I think Dr. Cameron has a statement from me to be presented for the record, Senator.

(The statement referred to follows:)

STATEMENT OF LEON O. JACOBSON, M. D., PROFESSOR OF MEDICINE, DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF CHICAGO

Research with radiations is directed toward (1) the practical problem of cure and palliation of cancer, (2) the study of normal and disease states of the body using radioactive tracer technics in attempts to find ways and means of diagnos-

ing and more rationally treating various disorders and, (3) finding means of avoiding radiation injury or treating or reversing radiation injury once sustained.

The scientific advances made in these areas of research in the past few years are already of immeasurable practical significance to medicine. These advances and hopes for the near future if research is implemented by the funds needed for prosecution of research can only be highlighted in this presentation.

RESEARCH AND DEVELOPMENT IN THE FIELD OF PENETRATING RADIATIONS

X-rays and radium have been used for many years for the treatment of cancer. That cures are obtained with these agents and that palliation often makes possible a productive and comfortable existence for the cancer victim is well known. But these agents have well-recognized limitations. One serious limitation is that in the treatment of deep-seated tumors normal tissues in the path of the radiation beam are damaged to almost the same degree as the tumor itself. Thus, the amount of radiation necessary to kill the tumor may exceed that which the normal tissue can tolerate. Technics such as rotational therapy with these agents have been developed in the past several years which overcome this problem only in a limited way. The clinical use already made of the betatron, however, has proven that by using much more highly energized rays the differential dose to the tumor as compared to surrounding normal tissue can be greatly increased. This fact implies that cure rate and palliation from cancer will be greatly improved. The betatron and somewhat similar instruments such as the linear accelerator are now being installed in many research and clinical centers in order to properly exploit the possible advantages to the patient. The importance of these steps to the practical problem of cancer treatment will become more evident in the near future. The cost of the instruments and the staff required for their operation is prohibitive except in relatively large research and clinical centers enjoying liberal support.

A number of research centers are developing the proton beam for cancer treatment. This proton beam is generated by certain types of cyclotrons of which there are only three or four in these United States. As yet in none of these centers has the beam been put to practical test. Theoretical and research studies have shown that as opposed to the radiations now available this proton radiation can be directed to a deep seated cancer in the body and deliver its cell-killing power without adversely effecting the normal surrounding tissue. The beam can be adjusted so that it will travel any desired distance and then deliver its charge. One might compare this approach to a guided missile which explodes only on designated target. The enemy in this case is the cancer and the guided missile the protons. At the University of Chicago the cost involved in developing this beam for cancer treatment is thus far in excess of $1,500,000. It is estimated that an additional $500,000 will be required in the research and ultimate development of this tool for cancer treatment.

THE USE OF RADIOISTOPES—DIAGNOSIS AND TREATMENT

The radioistopes produced in the uranium pile as a byproduct of plutonium production, and those made in the cyclotrons have already become of great practical importance in the diagnosis and treatment of disease. In the past several years especially, research has shown the directions which must be taken to utilize these tools with even greater benefit.

Currently only a small number of radioistopes are used in clinical medicine. Among these are radioiodine (I^{131}), radiophosphorus (P^{32}), radiosodium (Na^{24}), radiogold (au^{198}) and radioarsenic (As^{76}). Some 200 remain to be explored. Only 2 will be discussed here.

Radioiodine (I^{131}): The unique properties of radioiodine which make this radioelement of such great practical significance to medicine lies in the fact that it is metabolized and thus localizes (once it enters the body) almost exclusively in the thyroid gland; it becomes incorporated in the thyroid hormone (this hormone controls the pace of metabolism in the body). This fact has led to the use of this isotope in the diagnosis of diseases of the thyroid. If the thyroid is overactive (a disease known as hyperthyroidism) the gland retains more radioiodine than normal; if the gland is underactive it retains less than normal (a disease known as hypothyroidism). By a simple test of the blood a diagnosis of the state of the thyroid can be made. A small harmless tracer amount of radioiodine is administered by mouth to the patient. A sample of blood can then be

removed and the amount of radioiodine found in the thyroid hormone can be measured by the use of a Geiger counter. This is an instrument which measures each explosion of the isotope. Other methods recently discovered which can be used to diagnose the disease state of the thyroid are (1) measuring the amount of the radioisotope in the thyroid gland itself by measuring the atomic explosions as they appear on the sikn surface over the thyroid gland, and (2) by simple determination of the amount of radioiodine which appears in the urine. These methods are superior to the one used generally at the present time (basal metabolism or breathing test) to diagnose thyroid diseases.

Radioiodine is now used successfully to localize tumors of the brain, and administered to the patient. Localization occurs in the tumor and it can then be located by scanning the skull with a Geiger counter which automatically records the rays coming from the localized radioelement in a three-dimensional pattern. This method allows the surgeon to approach brain surgery with confidence of operating in the exact area of involvement. Prior to this recent discovery the brain surgeon often did not know with certainty in which part of the brain the tumor was located.

Radioiodine is now used in the treatment of cancer of the thyroid. In 30 percent of these cancers which have spread widely in the body the cancer tissue will selectively take up radioiodine. The radioiodine bombards the tumor tissue and retards or stops its growth. At the University of Chicago more than 100 cases of carcinoma of the thyroid have been treated with this isotope. Both clinical and pure laboratory research have recently supplied clues which make this form of treatment even more effective. It has been found that repeated small doses of radioiodine administered to patients with widespread thyroid cancers will retard the function of the normal thyroid and "force" cancer tissue to assume enough normal function to increase radioiodine absorption in the tumor tissue. Many examples of the spectacular results from this radioisotope can be cited. A single case will illustrate how dramatic the effect can be. This is the case of a young World War II veteran with cancer of the thyroid which had spread to many parts of the body. He was brought to the hospital in a terminal state due to an expanding tumor in the brain. Radioiodine was administered repeatedly, the tumor in his brain and elsewhere was destroyed and he recovered. He has since married, is gainfully employed and will undoubtedly remain in good health.

Radiophosphorus has been used to treat more than 500 cases of polycythemia. This is a disease which is characterized by the blood forming tissue making more red cells than normal. It differs from leukemia in that the latter disease is characterized by the manufacture of too many white cells. The useful life of patients with polycythemia is now comparable to normal individuals. All that is necessary is a single injection of radiophosphorus at intervals of 1½ to 5 or more years. This radioelement is useful alone or in combination with X-ray therapy, nitrogen mustard, and other agents in the treatment of chronic leukemia and related disorders. It, like radioiodine has recently been found to be extremely useful in localizing brain tumors.

RESEARCH WITH RADIOISOTOPES AS TRACERS

The horizon of medicine and all the disciplines which medicine embraces has been expanded many fold by the use of "tracer technics." Amounts of materials previously considered too small to handle can now be traced and studied in the body or in the test tube. This is accomplished by labeling compounds by chemical synthesis—placing radioactive elements in strategic positions in the molecule. This can perhaps best be exemplified using sugar as an example. Sugar contains atoms of carbon and hydrogen only. Any of these ordinary carbon atoms can be replaced by a radioactive carbon atom. This maneuver identifies or labels the sugar because the ray given off by the radiocarbon atom in the sugar can be "tuned in on" by a Geiger counter. It is possible therefore, to study how sugar is used by the body. This has already been done and many other complicated and intriguing puzzles of the body have been similarly explored.

Radioiron has been used to study the secrets of the body's manufacture of blood. Radiocalcium has been used to study the nature of normal and cancerous bone formation. Many other elements are being utilized for fundamental research on the nature of normal and abnormal (cancer) growth. These studies are bearing fruit and the harvest will be seen in the next few years.

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STUDIES ON THE NATURE OF RADIATION INJURY

Means of combating the radiation injury to normal tissue which occurs in the treatment of cancer is of tremendous practical importance. In the unfortunate event of an atomic bombing within our large cities, a crisis for which we must be prepared, a medical problem of unbelievable magnitude would confront us. We would be faced with thousands of individuals with radiation injury who require treatment in order to survive. No satisfactory methods are available to combat this threat. The antibiotics (germ killers) are of only limited value. Blood transfusions are likewise only partially effective. The amount of blood and plasma which would be required if an atomic disaster occurred could not be supplied. The fact is that no specific is as yet available to treat radiation injury once sustained. The solution to this problem, however, is within our grasp but tremendous effort in research and development will be necessary to bring the actual substance or substances to practical application. My colleagues and I have discovered the existence of a substance or substances which will save the lives of animals exposed to approximately twice the lethal dose of irradiation. It has been proven that this material is of a chemical nature and that it is manufactured by the blood forming tissues of normal animals. The evidence for these facts is summarized briefly below.

It was found that if only the spleen were shielded with lead during exposure of the balance of the body to a lethal dose of radiation the animals would survive. Animals irradiated with the same dose but without shielding of the spleen all died. The spleen of the mouse weighs only 0.1 grams or 0.005 percent of the body weight. The survival of mice exposed to 1,100 Roentgens (units of X-rays) with spleen shielding is nearly 100 percent. In fact approximately 30 percent survive exposure of 1,300 Roentgens if the spleen is shielded. This latter dose is more than 500 Roentgens above the lethal dose for mice. The lethal dose to humans is thought to be in the neighborhood of 400 Roentgens. If the spleen is shielded during exposure of mice to a lethal dose of X-radiation it (the spleen) may be surgically removed 1 hour after this procedure and yet the animals survived. In other words the spleen manufactures a substance which when made available to the irradiated animal for only 1 hour is sufficient to reverse an otherwise fatal termination. If fresh spleen from a normal mouse is injected into a mouse which has been given a lethal dose of X-radiation, the irradiated mouse will survive. Even as late as 2 days after exposure to lethal dosages of irradiation injection of fresh spleen is effective. Only 0.01 grams of fresh spleen is needed. This is 0.0005 percent of the mouse body weight and indicates the tremendous power of the injected tissue in initiating normal function and regrowth of those cells in the irradiated body which are critical to survival. Tissue from unborn mice (embryonic tissue) pressed through a fine steel mesh and injected into irradiated animals is also effective. Recently Lorenz at the National Cancer Institute has shown that bone marrow taken from normal mice and injected intravenously into mice given lethal dosages of X-radiation is likewise effective. We have shown as has Lorenz that spleen or bone marrow from rabbits or guinea pigs is also effective when injected into mice previously exposed to lethal irradiation. These latter facts prove conclusively that the factor or factors responsible is a chemical. It is produced by living cells and it is manufactured largely by the blood-forming tissue. Only minute quantities are necessary to bring about recovery from otherwise fatal radiation injury. This phenomenon has been demonstrated to be applicable to mice, guinea pigs, rabbits, rats, and dogs. Its effect in primates (monkeys) and man has as yet not been tested.

The problems which remain are to isolate the substance or substances involved, identify it chemically and test its effect in proper experimental animals and in man. Isolation and identification will be extremely difficult and will require the talents and facilities of many scientists. The cooperative effort for which these United States are noted will do the job providing financial support is made available. The significance of these facts to medicine in general and cancer in particular are obvious. The significance of this problem to atomic casualties is also obvious. If the substances under discussion can be made available one might logically expect radiation injury to be early and successfully managed and thus reduce the impossible demands for whole blood which is expected in atomic disaster.

The research application of these discoveries to the problem of cancer has already been tested. Lorenz has shown that whereas a particular tumor in mice cannot be cured by conventional X-ray therapy it can be cured by irradiating

the whole body of the mouse including the tumor if the spleen is lead shielded during irradiation. The shielded spleen promotes recovery of the normal tissue of the body but the tumor is killed.

NEED FOR STUDY OF EFFECT OF RADIATIONS ON PRIMATES

Because of the expensive facilities and the high cost of monkeys little work has been done with radiation in this species. Scientists are agreed that this animal more closely compares with man than does any other laboratory animal. Since experimentation on human beings is limited to harmless procedures or desperate situations, work on monkeys must be expanded and accelerated. Study of radiation effects in monkeys is of particular importance since rational approaches to care of the human being must be worked out prior to the time when we may be faced with thousands of radiation casualties. In this connection we must also study higher energy radiations which are more comparable to the radiations which emanate from an atomic explosion. This can only be done adequately by making high energy radiation installations available to research teams. These installations include betatrons, linear accelerators, and the like which are extremely costly. Some evidences available indicate that great differences in biological effect exist between 250,000 volt X-rays which are generated in the standard research machine and the 3,000,000- to 50,000,000-volt rays generated by betatrons and comparable instruments. This possibility must also be explored for practical reasons.

A NEW APPROACH TO TREATMENT OF CANCER

In 1941 Charles Huggins demonstrated that the growth of cancer of the prostate, even though widely disseminated in the body, could be inhibited by orchiectomy (removal of the testicles). It was shown that elimination or inactivation of the male hormones of a particular chemical configuration was responsible for this tremendously important effect. A new principle, in fact a new chapter in the approach to cancer research was opened by this discovery. Certain cases of cancer of the prostate could be adequately controlled, the patient's suffering relieved. Many of these hopelessly incapacitated victims of cancer were able to resume a comfortable and productive existence following a simple operation (orchiectomy). Later it was found that no operation was necessary as a female hormone (estrogens) given by injection effectively controlled the disease. Concomitant with these discoveries it was found that this group of tumors which spread to bone, elevated a chemical known as acid phosphatase in the circulating blood. It became possible therefore to use a simple test of the blood to determine whether a potential cancer-killing agent was effective. If the agent was effective it reduced the acid phosphatase level in the circulating blood. If the agent was ineffective no change in the blood acid phosphatase was produced.

Recently Huggins has made another significant discovery. He has presented proof that the adrenal glands in certain cases of cancer stimulate the cancer's growth. Removal of the adrenal glands deactivates the cancer. Twenty-eight human patients with hopeless widespread cancer have been operated upon and both adrenal glands removed. Certain of these patients suffering from cancer of the prostate or breast have made spectacular improvement. Other patients with tumors such as melanosarcoma and carcinoma of the lung obtained no regression from adrenalectomy.

The fact that adrenalectomy can induce regression of certain highly malignant cancers but have no favorable influence on yet other cancers indicates the magnitude of the problem we face in cancer research. Most kinds of cancer differ in their metabolic behavior; the approach to each must be individualized. On the other hand some of the facts discussed show that important strides have been made; we have a foothold. We need only to pursue the problem of normal and cancerous growth with greater vigor and enthusiasm.

CHEMOTHERAPY CANCER TREATMENTS

Dr. JACOBSON. I would like to talk rather briefly on some of the practical aspects that have been accomplished in cancer treatment.

I am going to confine my remarks to the problem of radiation.

Senator CHAVEZ. Before you proceed, will you identify yourself, professionally?

Dr. JACOBSON. I am Dr. Jacobson, professor of medicine, University of Chicago.

The research which is being carried on in radiation is conveniently divided into three categories:

First—and this is very important—the practical problem of the treatment or the palliation of the patients with cancer.

Senator CHAVEZ. Are you going to devote your time to that and not to investigations or research?

Dr. JACOBSON. I am going into investigations, sir.

STUDY OF RADIATION EFFECTS

The next aspect, of course, is the study of the normal and the abnormal disease process with radiations.

The third is the attempt in research to find ways and means of avoiding actually the injury that is produced by the radiations which are used in the treatment of cancer.

I think you are all aware that X-rays and radium have been used for 50 years.

Senator CHAVEZ. Doctor, I do not believe this committee or any other committee has a separate definition of cancer. I believe it would not only be informative, but also of value to the committee. What is cancer?

Dr. JACOBSON. Cancer I think I might define as an abnormality within a cell, or group of cells, which makes it different from the normal cells of the body and it is not controlled there by the various controlling agents in the body which regulate growth normally. That is one way of putting it.

Senator CHAVEZ. I think that is satisfactory.

BETATRON

Dr. JACOBSON. I want to say a few words about something of the practical aspects of X-ray and radium therapy. For 50 years we have used these things. Now, the developments in the last 2 years are pointing the way to the use of high energy radiations, let us say, from the betatron, which is a new development in the last few years.

The purpose of these radiations is to try to get to a tumor within the middle of the body a dose which will kill the tumor without destroying the normal tissue in the path of the beam or beyond the beam.

This is now possible in the last year or two to a much greater extent than it has ever been before with betatrons, with high energy radiations.

PROTON BEAM

There is another development which is coming along and which will be practical, I would hope, in the next year or two, but which has been proved experimentally to be effective, and that is what is known as the proton beam which is generated from cyclotrons. With the proton beam the radiation can be brought to the tumor and to the tumor only.

The radiation then explodes within the tumor. Between the tumor and the outside, then, the normal tissue gets no radiation. It is an ideal situation obviously.

Senator CHAVEZ. This, of course, is brought out by research.

Dr. JACOBSON. I might say in our own institution we have spent $1,500,000 of private funds to develop this instrument. There are other instruments in this country. It will take another million dollars to bring that instrument to the practical application of the patient.

RADIOACTIVE ISOTOPES

I want to say something about radioactive isotopes. As you know, there are several hundred of them available. At the moment we only use about seven. There are 200 which are not even explored as yet. Of the seven which we use, I will only discuss two briefly—radioactive iodine which you are familiar with, and radioactive phosphorus.

Radioactive iodine is supplied from the uranium pile at Oak Ridge, or produced in cyclotrons in the various universities throughout the country. It is now one of our weapons in cancer and in cancer of the thyroid.

I think if I can go through the slides I will give you an idea of how this development has come about.

Radioactive iodine is of peculiar interest because of the fact that it localizes only in the thyroid gland and in the event a patient has cancer of the thyroid, then the radioactive iodine, which is a colorless fluid——

Senator CHAVEZ. Is thyroid a cancerous condition?

Dr. JACOBSON. Thyroid cancer—I am talking about cancer of the thyroid. This disease spreads to bones all over the body and is sometimes a great problem.

Here is a man—looking at this slide—drinking radioactive iodine just like he drinks water. We can now locate the radiations as they come from radioactive iodine taken up by the cancer by what is known as a Geiger counter. In this way we can localize where the tumor is in the body and also get an idea of how much effect we are having with the radioactive iodine.

This is another way—looking at this slide—of determining how much radioactive material has been absorbed by the thyroid.

Then in the next slide, we are confronted with a patient with cancer of the thyroid and we are interested in knowing whether or not this individual would get any result from the use of radioactive iodine. We can give the iodine to him prior to surgery.

What you see on the slide here is a thyroid gland that has been removed after the patient has been given radioactive iodine, and the shadow on the right is the fogging of the photographic plate by the radioactive iodine in the tissue you see at the left.

This next slide shows the same principle, so here we have a method of actually determining whether or not we are going to get an effect from it.

About 30 percent of the patients with this disease get an effect from this material.

This slide here shows a veteran who came to us in a terminal state because he had cancer of the thyroid which spread to the brain and the pressure in the brain was killing him.

In the next slide we were able to localize that tumor by radioactive iodine by giving material to the patient, and you can find this little area in the brain which is expanding.

I want to use this opportunity to tell you that radioactive iodine is also used, and very effectively, to localize brain tumors, which have

nothing to do with the thyroid, as does phosphorus, so we are talking now about both diagnosis and the actual practical treatment of the patient.

This is another patient with carcinoma thyroid. You can see the mass sticking out from her neck. This is the same patient now 3 years later, and the thyroid tumor has disappeared. The patient is well. So is the veteran that you just saw in the previous slide.

This shows the expanding lesion on the left in the chest and on the right its disappearance after treatment with radio iodine.

POLYCYTHEMIA TREATMENT

Then I will go to radio phosphorus for one moment. There is a disease known as polycythemia. That means they have too many red cells. They make too many red cells. Radio phosphorus will control these patients. One single injection will keep these people well from a year and a half to 5 years. That has been accomplished by careful research.

This is the bone marrow which produces the blood and in this patient you just saw what that looked like. We give radioactive phosphorus and this shows what has happened to the bone marrow. It is now normal and remains normal for as long as 5 or more years.

A single injection once every 1½ to 5 years is sufficient.

Senator CHAVEZ. There is a possibility that eventually you will get something that will get it back to normal without any further application?

Dr. JACOBSON. That is right. On the other hand, you can see if you can only give one injection every 5 years, as not infrequently happens, one has accomplished a great deal.

The next slide, please.

I am going to take you for a few moments to what may seem in a sense an impractical thing, but I want to indicate to you the practical aspect involved.

I have told you in the beginning that one of our big problems was in eradicating a tumor. We are radiating normal tissue, destroying normal tissue. We have another problem that faces us which is related, and that is the thing that we are worried about in a sense, the event of an atomic disaster, and the widespread irradiation of people.

So that we have two problems that we are working on here at once.

CHEMICAL STUDIES IN ATOMIC RADIATION EFFORTS

There has been no specific way of treating these casualties, the atomic casualties, or treating the normal tissue. I am going to try to indicate to you that this problem is almost solved, in a sense.

This is a mouse that you see on the screen here. He is sleeping after an anesthetic. An operation has been done. His spleen, which lies under the left ribs anteriorly in human beings as well, has been removed, simply brought out of the abdomen and put in a lead shield.

Now we have the shield in place and we can irradiate this animal now. The only thing not irradiated will be his spleen. Six hundred units of radiation kills these animals if they have no shielding any place. We can get up to eleven hundred to twice that dose, a thousand and twenty-five R (or radiation units) and still 86 percent survive.

Get up to 1300–R, which is five or six hundred units above the dose, and that is lethal.

We still have a very large fraction of them surviving.

Senator CHAVEZ. That is twice 7 percent?

Dr. JACOBSON. At 1300–R.

This is to give you an idea of what happens with these doses of a thousand R. This is a bone marrow, a femur, which has been cut right down through the middle for microscopic investigation. That is 8 days after a thousand R.

Senator CHAVEZ. What is A?

Dr. JACOBSON. These are controls. This is what they should look like normally.

This one is the irradiated animal. He will die within 3 or 4 days.

Here is an animal who has gotten the same dose. In this animal the spleen shield has shielded him and this is a perfectly normal marrow. The animal, by shielding the spleen, something has come from the spleen which has completely reversed this lethal effect of radiation.

We get regeneration of tissue and reconstitution of the functions of the cells in the body.

Next I want to give you a few other things about this. If I tie this spleen that you see here, put a string around the spleen and tie off the blood supply to it, during the time that I have irradiated with the lead shield as you saw in the beginning, then an hour later I take out the spleen.

In other words, he has been irradiated. It has been in circulation for 1 hour. I take it out. He does not need it any more.

In other words, you have already accomplished for the animal the same thing as if you had left it in indefinitely. This material is apparently very potent and only has to get to the cells of the body to change this whole picture from one of death to one of life.

Senator CHAVEZ. And carry out the functions of the spleen itself?

Dr. JABOBSON. That is right. We have gone beyond this. We no longer have to shield this spleen. We can irradiate the whole animal, but we can inject the spleen.

The National Cancer Institute has gone further. They have been able to inject bone marrow, take it out of a normal animal and inject it into an animal that has been given a lethal dose of irradiation, and he lives.

The reason we know it is a chemical and is not cells is we can take cells from a guinea pig and inject them into a mouse that has been given a lethal dose and the animal lives.

So you now can see it remains for us to isolate this thing. This may seem very simple, but I would expect the cost of isolating this to be millions of dollars so that you will have it in a syringe ready to give to a patient who has been treated for cancer or an atomic casualty.

CURE OF CANCER BY RADIATION AND CHEMICAL TREATMENTS

Actually this has a very interesting application to the treatment of cancer beyond this problem of reconstitution of normal tissue.

One of the scientists from the National Cancer Institute has shown that if an animal has cancer and he irradiates the whole animal, and the tumor is killed, that would also kill the animal, but then he in-

jects this material and the animal lives. The cancer is gone. He has cured the cancer.

This is an interesting application to cancer therapy in the future.

I want to touch on one more thing.

Senator CHAVEZ. Before you change that slide, have you experimented with humans?

Dr. JACOBSON. Sir, as you very well know, we cannot do this to the human. We can, but technically it is difficult.

Senator CHAVEZ. You are trying to reach a point where you might be able to apply it to humans?

Dr. JACOBSON. Yes. The moment you have your material in the test tube, then it can be easily applied. There is no question about the applicability to the human.

We have gone up through practically all animals in the animal kingdom which we use as laboratory animals. The one thing we have not done which I want to stress very greatly today is the need for work on the monkey. The monkey, according to biology, is as close to the human as we can get in an animal. One of the problems involved in this appropriation is the use of high-energy radiations like the atomic bomb or like the betatron which I spoke about a while ago, and the use of the so-called higher primates in this type of research.

I want to cover very briefly just one more aspect. I want to discuss another very practical problem in terms of what we have accomplished.

OTHER THERAPY OF BENEFIT TO CANCER PATIENTS

This is the normal pelvis on a man. Below this on the screen is a patient with cancer of the breast with metastases, spread of the cancer to the bone and destruction of the bone. The bone is practically gone. Can we do anything for this person? The answer is definitely yes.

Through chemotherapy, which was mentioned briefly today, this patient can be helped. Some of them cannot, however.

Then we go to another one. This is the one I am going to discuss today. If you have a patient with a cancer of the breast, or cancer of the prostate which has spread to the bones—we have in the blood circulating a high level of something known as acid phosphatase. If you now take out the adrenals, and I am sure you know what they are—they are two small bodies about the size of a quarter, or less, above each kidney—if these are taken out—this would not have been possible a year and a half ago, I might say, but it is possible now because we have such things as cortisone to control the patients.

If you take that out, the acid phosphatase comes back to normal.

This is an actual patient with cancer of the breast which has spread. You can see what a terrible situation it is. This is the patient now healing after an adrenalectomy.

This is a patient with cancer of the prostate with metastases to the bone and chest. He has had an adrenalectomy. Here we have healing. This is simply scar formation.

In this slide here is a patient with carcinoma of the breast with the whole side of the chest full of fluid. This slide shows that the fluid is gone after treatment.

You might say have you licked carcinoma of the breast and cancer of the prostate. The answer is no. Probably this thing I have shown you will apply to a small percent of these people. That is the reason that cancer research has to be adequately supported because each of these cancers apparently has its own peculiar metabolism which you have to dig out individually.

Senator CHAVEZ. Nevertheless, the emphasis which you try to show by the slides shows progress has been made?

Dr. JACOBSON. Very definitely.

Senator CHAVEZ. Thank you, Doctor.

Dr. CAMERON. We now proceed with Dr. Rhoads, of New York.

Senator CHAVEZ. We will be delighted to hear you, sir.

SUPPORT OF NATIONAL CANCER INSTITUTE RESEARCH PROGRAM

STATEMENT OF DR. C. P. RHOADS, DIRECTOR, MEMORIAL CANCER CENTER, NEW YORK CITY

Dr. RHOADS. I am Cornelius P. Rhoads, and I am the director of the Memorial Center for Cancer and Allied Diseases, and the Sloan-Kettering Institute for Cancer Research in New York City, and a professor of pathology at Cornell University Medical College.

I appear here to endorse the position taken by Dr. Cameron for Mr. Adams of the American Cancer Society. This position is that funds are needed beyond the proposed executive budget for the support more broadly of cancer reasearch, research designed to achieve means for the cure and the prevention of cancer based upon knowledge of its cause, and particularly funds available under the plan described by Dr. Cameron of the so-called institutional grant which permits the coming together of some scientists of different disciplines and competence under one roof so that they may team up to the accomplishments of the ends we all heartily desire.

I have been asked to defend this proposal upon the evidence of the progress which has been made in cancer treatment and cancer prevention, and that which can be expected in the future.

I would like to point out that our bodies are composed of an immense number of cells which are semi-independent units. These cells are constantly growing old, dying, and being replaced by new cells.

For example, when we wash our hands we wash off a certain number of dead cells and they are being replaced by new cells. The new cells which replace the old ones tend to be like their parents, but from time to time for various reasons, the new cells differ from their parents.

By this difference they are not susceptible to the normal control forces of the body. They grow without control, invade and destroy the body. That is cancer.

CANCER CURES THROUGH RESEARCH

We can divide the cancer problem into two basic divisions:

1. The achievement by research of means for curing cancer, which means in the last analysis the removal by one means or another of all of these abnormal cells. The second main division is the efforts achieved by research, knowledge of the cause of cancer in man, and its removal before the cancer occurs.

I will discuss the progress which has been made under these two main headings.

Under the first heading, the cure of cancer, we have in turn two subdivisions:

A. The first, the cure of cancer which is still comparatively localized masses of cells which have not spread widely throughout the body.

In that instance we can cure by removing mechanically, or by radiation, this localized mass of eroding and destructive cells and very great progress has been made in this division of the work.

If I may talk from the exhibits which we have here, here is the cure by mechanical or radiological means of cancer semilocalized in the organ in which it arose or in the adjacent tissues. Great progress has been made. Actually research has, in the past 5 years with the aid which has been provided from voluntary and public funds, taught us to what tissues specific types of cancer migrate.

So that now we are better able to remove by surgical operation not only the original focus of cells, but also those areas of tissue adjacent to the original foci which are potentially and probably involved.

CANCER OF THE BREAST

A very good example is shown here as it pertains to three types of cancer. For example, cancer arising in the brest tends to migrate from that primary focus to little filters which are called lymph glands located under the arm in the armpit.

So, for 50 years, the surgical operation for cancer of the breast which now today cures about half the patients appearing with cancer of the breast who are operated on has included not only the breast but also these filtration areas to which the cells of the cancer have gone.

Quite recently through research it has been established that the cancer tends to go not only to the glands under the armpit but to these glands which are under the breastbone. A man who was trained by funds of the National Cancer Institute (which are essentially institutional grants for training purposes to an institution receiving aid from these public sources) established the best evidence that these glands do tend to be involved. He developed a new operation shown here in red to include not only the glands removed, but these glands which have not been removed previously. This is a perfectly feasible operation which seems likely to increase substantially the cure by operation for this very common type of cancer. The operation can be done without hazard to the patient. There has been no increase in mortality and no added postoperative disability for the patients subjected to the operation.

This is a comparatively simple, but a very important, practical aspect. It may represent thousands of lives a year in this country. Breast cancer in women is one of the commonest forms of cancer.

CANCER OF THE LUNG

Similarly, with cancer of the lung, the tendency there is quite strong for the cancer cells which may be in the side of the lung to migrate from the primary focus to the tissue around the great blood vessels, the windpipe, and the gullet.

In the past no effort has been made to remove anything but the primary focus in the lung itself and it has not been deemed possible to remove this potentially involved tissue around the windpipe and the blood vessels.

Now, we find by careful study in the pathological laboratory that these tissues are very likely to be involved. If they are not removed, the patient is doomed. Since they have not been removed in the past the cure rate has been very low—about 4 percent.

Senator CHAVEZ. It would appear to one unacquainted with medical science that the ones that effect the windpipe would be more dangerous in the other area, looking at your chart there.

Dr. RHOADS. They are. Operations have been devised and are in use in a number of clinics today as the result of work of National Cancer Institute scholars or trainees. This operative technique permits the removal of tissue around the windpipe and gullet and the blood vessels with apparent safety, without morbidity, and almost certainly with the result of an increased rate of cure for this very common and increasingly common disease.

CANCER OF THE WOMB

The same situation obtains with cancer of the womb. We have in the past been able to cure such patients by surgical removal of the cancer in the womb itself. This is the rectum that you see here, and this is the bladder and this is the womb. Very frequently the cancer has gone beyond the womb into adjacent tissues, into the bladder wall, or rectal wall.

In the past there have been really no means for satisfactorily irradiating this cancer. In the last few years operations have been devised which permit the removal not only of the original focus, but of the adjacent tissues as well. They are very extensive operations.

The tissue removed by newly developed procedures is shown by the red line; the blue line shows the old type operation. These patients can be restored to a useful and happy life. They are taken from homes where they have lain in pools of excreta for many months, a stench to themselves and intolerable to their associates. This is the product of research.

RESEARCH ACHIEVEMENTS IN CANCER SURGERY

We can do this not only because we are learning better technical methods through research; learning where the cancer tends to go, but because we are learning how to control the complications which in the past have rendered impossible this type of surgical procedure.

Here are three simple examples: In the past many of these patients would not tolerate these operations because they tended to have uncontrollable bleeding after the operation. We now find that it is because a ferment is squeezed out of the operative tissue into the blood stream and this ferment actually dissolves the clot which the body naturally forms to control hemorrhage in an operative field.

So, we have intractable hemorrhage and we have deaths in many instances from such hemorrhage.

Now, we have, through the aid of commercial houses, pharmaceutical houses, and through the aid of the National Cancer Institute's research program in a voluntary institution, developed a chemical

which will neutralize the action of this clot-dissolving ferment, and render the clotting function normal. After such treatment the patient does not bleed. We have a successful operation and a happy patient.

Similarly, it has been learned that by the use of certain chemicals which decrease the blood pressure in patients who are to be operated on that hemorrhage during operation can be reduced. Hemorrhage during operation is a serious problem, not only because of the shock and the requirement of transfusion, but because it obscures the operative field; that is, the tissue which is being removed surgically, and makes it very hard for the surgeon to remove skillfully and completely these areas of potentially involved tissues.

So the surgeon works in this sort of field in which contrast is very slight.

By the induction of low blood pressure by these new chemicals, the operative field is perfectly clear and these potential foci of eccentric cancer can be removed successfully and blood transfusions may not be necessary at all.

Similarly, in the past, patients subjected to these operations had a high mortality rate because there was a certain chemical induced by the blood pressure which, by various chemical work, we now know how to control.

We find that the chemistry of the patient is disturbed before operation because of the presence of a cancer. We can restore the normal minerals and the chemicals in the blood required for normal health. We can maintain respiration after the operation. As a consequence, we are every day now sending patients through operations comfortably and easily, who would have died 5 years ago. That is the localized cancer approach.

CHEMOTHERAPY TREATMENT OF SCATTERED CANCER

Now we have the progress made in the control of widely scattered cancer, which, when it comes to the attention of the physician, has gone beyond the local focus or adjacent tissues.

The previous witnesses have already made a very comprehensive reference to this type of study, which we call chemotherapy; that is, the search for agents which will seek out and destroy each and every cancer cell wherever it may be in the body. Real progress has been made in this regard.

For example, during the war, it was observed that a poison gas, nitrogen mustard, which our enemy had, and we were prepared to combat, had a profound effect in destroying certain forms of cancer arising in the blood forming tissues of the bone marrow and the lymph nodes (or lymph glands). Dr. Jenkins made the most important original contributions in showing that this compound, nitrogen mustard, made as a war gas, would temporarily restore to health many patients with a very serious form of cancer, called Hodgkins disease, and the allied condition, cancer of the blood forming tissue.

Since that time, 1942 pharmaceutical houses and laboratories are now collaborating in the preparation of chemicals, and roughly 300 compounds related to nitrogen mustard have been prepared. One is called TEM, which has a similar action in shrinking down the cancer

and restoring temporarily essentially normal circulation to the afflicted individuals.

These are not cures, but I can assure you they are very gratefully received by the sick patient who can return to work and to his family, even though it may be for some months to a few years. We hope that through knowledge of these effects we can get cures in the future.

Similarly, Dr. Jacobson showed you, and I can endorse very strongly that through the work of the Lederle Laboratories and the Children's Medical Center, there have been developed these compounds we refer to as antifolics—it makes no difference what we call them—which do have the power to restore to essential health these children with blood forming cancer tissue, a most disgusting disorder. The children come in bleeding, panic stricken, with the distracted parents, and can be restored temporarily to essentially complete health, and another substantial number can be greatly benefited.

PALLIATIVE CANCER TREATMENTS WITH CHEMICALS

It is true that the disease will come back in time because the cancer cells are not quite all destroyed by the agent used. Those which are resistant to the agent then grow out, and we have a resistant disease. We are all very ardously seeking new chemicals which will hit the cells which have become resistant to another one of the same type, and with the experimental animals some success is being attained.

Similarly, with a cancer of the thyroid gland, as described by Dr. Jacobson, the thyroid gland has a great appetite for iodine. Therefore, they will concentrate iodine 100 times as actively as would any normal cells of the body. In many instances, as Dr. Jacobson told you, the weight of active iodine can be given. The cancer cells as well as the normal thyroid cells take it up avidly and commit suicide.

Here is a child with a cancer of the thyroid gland. Both lungs have scattered nodules of the thyroid cancer, and following radioactive iodine therapy, his lungs are essentially clear.

Furthermore, by various tricks that I will not detail, those forms of thyroid cancer, which may lack this appetite for iodine, can be made to develop an appetite to take up radioactive iodine and commit suicide. These are not curative procedures, but palliative only. But, again, they are very welcome to the afflicted child and his family.

Similarly, the cancer of the breast—Dr. Jacobson showed you a pelvis—with a cancer of the breast, as we have here, this is an ulcerated eroding cancer of the breast tissue of a woman.

We have heard now, largely through one source supported by the National Cancer Institute and voluntary institutions, that certain relatives of the hormones formed by our genital and adrenal glands can be employed to give healing of these ulcerated lesions in bone or in the soft tissues.

A new compound of this type has recently been described. It has not been made known publicly, although it is now in use in a number of institutions. It seems to be a somewhat better, distinctly better thing than those in use. They are satisfied with this compound. Many women who presently are suffering with deeply ulcerated and stinking lesions of their breast will be restored to health and well being at least for a time.

TRAINED VIRUSES TO CURE CANCER

Also, it is possible to develop viruses which will seek out and destroy cancer cells in experimental animals, and probably in man. Viruses are tiny parasitic organisms which cause influenza and infantile paraylsis and mumps and a variety of disorders. They are parasitic. They will invade and destroy certain specific tissues which they like to invade and destroy.

Certain workers concede the idea that these viruses could be trained by feeding them entirely on cancer cells to seek out and destroy cancer cells. In the animal, this can be done regularly and under suitable conditions without harming the animal.

This is a tissue culture. These are human cancer cells. This is a piece of human cancer planted in a test tube under proper conditions, and these are human cancer cells rolling up.

When one of these trained viruses is used to infect the fluid in which these cells are growing, all the cancer cells are destroyed and only normal cells are left surviving.

In experimental work with animals which are subject to cancer, there is a very uniform effect of properly trained viruses. We have no idea how far this can be carried in human beings, but already certain experiments have been made, and in some instances there have been substantial destructions, not complete destruction, but substantial destruction of certain forms of cancer in human beings, with substantial palliation to the individual who was dying when the study was begun. In experimental animals, a variety of chemical compounds are coming to hand, which certainly have a profound restraining effect, at least, on the cancer in the animal.

Over 11,000 compounds have been supplied and have been tested. As I remarked previously, 142 cooperative groups supply these compounds and are constantly initiating new programs of synthesis of new types of chemicals, according to results which have been achieved in animals and in men.

In a number of compounds (about 240 of several different groups are now available) which will have this restraining effect; indeed, sometimes a curative effect, on active cancer in experimental animals. When the compounds are proved to be safe for human trials, they are moving into patients, as was described by the Boston group.

ADVANCES THROUGH RESEARCH

I can only say that we had in 1935 as much information about the types of chemicals which would destroy bacteria as we have now concerning the types of chemicals which will destroy cancer cells in the animal, sulfanilamide and penicillin could have been predicted, and we are very hopeful that from the evidence now at hand, from this extensive research program, which indicates clearly that cancer cells can be destroyed without death of the body in which they live, that we will have better agents from year to year if your legislative body will give us the funds to continue the work.

Senator CHAVEZ. Let me ask you one question, Doctor.

If I understood you and the other witnesses correctly, it is possible now to isolate a cancer area and maybe, through surgery or through drugs, remove the cancer.

Is there any reason, within your knowledge, to believe that there might be some dormant cancer cells that would revive the cancer?

I hope you understood my question.

Mr. RHOADS. Yes, sir. If all the cancer cells are removed, cure can be expected. The difficulty with operation in the past has been that not all the cancer cells were removed, but small foci were left. That is why I referred in the first part of my talk to the research to develop the old knowledge of where these foci may be and our ability to remove them.

I would like to add one word with reference to your question before, Senator Ecton, and that was this area of understanding why cancer occurs in human beings, and how it may be prevented.

RESEARCH ON CAUSES OF CANCER

There is a vast body of evidence to suggest that in animals and in man cancer occurs because certain chemicals manufactured by the body, by those glands, the glands go wrong—the testes, ovaries, and adrenals.

We do not know in what respect because we have not been able in the past to define and to measure each one of these chemical products formed by an individual's testes, ovaries, and adrenals. There has been a 9-year program under way, very largely supported by the National Cancer Institute, to achieve, through the finest type of fundamental organic chemistry, means for defining and measuring exactly how your and my adrenal glands work and what they produce.

Evidence has just come to hand by the application of these ponderous and difficult, precise methods, that when the very earliest kind of cancer makes its appearance, that there is a fundamental disturbance in the manufacture of these endocrine substances, which we call hormones, and these are very potent. It appears that we will be able to correct this before the cancer really becomes fully developed. So there are suggestions as to the cause of the cancer in man, which must be found with the best type of scientific work.

Senator CHAVEZ. Thank you, Doctor.

Mr. Teeter, we will hear you before we adjourn this morning's session.

SUPPORT OF NATIONAL CANCER INSTITUTE RESEARCH PROGRAM

STATEMENT OF JOHN H. TEETER, EXECUTIVE DIRECTOR, DAMON RUNYON MEMORIAL FUND FOR CANCER RESEARCH, INC., NEW YORK, N. Y.

Mr. TEETER. Thank you, Senator.

I am John H. Teeter, now executive director of the Damon Runyon Memorial fund.

My background is that of electrical engineer, graduate of Massachusetts Institute of Technology in 1922, where I was both a student and teacher under Dr. Vannevar Bush.

I think you gentlemen know me better as Dr. Bush's head technical aide, and later as aide to the Senate Majority Policy Committee, and still later as aide to the House Interstate and Foreign Commerce Committee.

It is a pleasure to be back with you again. This time in the capacity of executive director of the Damon Runyon Memorial fund. My experience in this field goes a little beyond that. I was previously the research administrator for the American Cancer Society.

There is, I think, the most desirable working relationship between the various organizations in the field of cancer.

I should like, if I may, sir, to file a statement for the record, with the subsequent supporting data.

Senator CHAVEZ. We will be glad to have it.

(The material referred to follows:)

MARCH 11, 1952.

STATEMENT OF JOHN H. TEETER, EXECUTIVE DIRECTOR OF THE DAMON RUNYON MEMORIAL FUND FOR CANCER RESEARCH, INC., HOTEL ASTOR, NEW YORK, N. Y.

Mr. Chairman, I am aware of the time limitation of your committee and therefore request permission to file the following statements for the record. I make this statement on behalf of Walter Winchell, founder and treasurer of the Damon Runyon Memorial fund.

Name: Damon Runyon Memorial Fund for Cancer Research, Inc.

Address: Hotel Astor, Broadway and Forty-fourth Street, New York 19, N. Y.

Officers: Dan Parker, president, sports writer, Daily Mirror; Leo Lindy, vice president, Lindy's Restaurant; Walter Winchell, treasurer, radio commentator and columnist; Arthur Godfrey, secretary, radio and TV artist.

The fund enjoys Federal Treasury exemption as a nonprofit organization, and was incorporated on February 18, 1947, under the laws of the State of New York.

The Damon Runyon Memorial fund devotes its entire resources to research in the field of cancer. It does not maintain or support any clinical facilities. All moneys collected are paid out in the year received to institutions enjoying the manpower and facilities to conduct cancer research. There are no deductions of any kind from the contributor's dollar for administrative expenses.

Allocations are made by the committee for fellowships, grants-in-aid and institutional grants for salaries, equipment, and expendable supplies to support research in the field of cancer. No grants are made for construction.

To date $4,896,379.24 has been allocated in 221 grants and 153 fellowships in 149 institutions in 46 States, the District of Columbia, and 12 foreign countries. A geographical list of grants is attached.

The fund does not conduct a Nation-wide campaign at a given time, but depends on voluntary contributions and special events. To date, $6,08),385.77 has been raised through unsolicited contributions, Walter Winchell's radio and column comments, Milton Berle's telethon, the Fraternal Order of Eagles, Arthur Godfrey's programs, and the Broadway theater tickets to hit shows available at all times through the fund at box-office prices plus a contribution to the fund. The theatergoers get a front, center orchestra seat, and make a tax-deductible contribution at the same time instead of paying a scalper.

You gentlemen will be interested to see the fund has made grants in 46 out of the 48 States and in 12 foreign countries. Efforts are being made to stimulate cancer research in New Hampshire and Mississippi, the two absent on our list, but there seems to have been a little difficulty recently on some publicized all-purpose cures that failed to stand up scientifically.

As in the past 2 years before this committee, I cannot urge too strongly the specific allocation of funds for the testing of so-called cancer cures. The burden of proof must rest on the claimant, otherwise the task becomes too great, but funds for adequate testing should be made available. As much money is now being lost by cancer victims following these false claims as is used to seek the cause and control of the disease. Money is replaceable but the time lost by the innocent victim is priceless and irreplaceable. Time much better spent in the known medical and scientific cancer research centers. At least three Members of the Senate have recently backed so-called cures. This, gentlemen, becomes a serious matter. At long last there is a committee, the Committee on Cancer Diagnosis and Therapy, in the National Academy of Sciences, attempting to evaluate so-called cures. Its progress has been slow and its funds limited.

Gentlemen, the appropriations for cancer research in the 48 States must increase at least 15 percent each year if it is to be maintained at its past level. The declining purchasing power of the dollar is constantly eating away the level

of cancer research in this country. You must increase appropriations if you are to do no better than stand still—and cancer does not wait. I am aware of the increasing cost of Government but even more so of the economic loss to the Nation caused by the chronic diseases.

One large source of revenue that enjoys the benefit of research to increase life's span has remained untapped. The life-insurance companies pay out over $2 million a day on death claims due to cancer. They have contributed less than $150,000 to cancer research in the history of the fight against this disease. Sheer good public relations suggests their interest in longer life premiums and warrants help in cancer-research programs.

Gentlemen, I thank you for the opportunity to be heard.

DAMON RUNYON MEMORIAL FUND FOR CANCER RESEARCH, INC.

Geographical breakdown of allocations Mar. 1, 1952

	Symbols [1]	Total institution	State total
Alabama:			
Alabama Polytechnic	1 GIA	$3,600.00	
Baptist Hospital	1 GIA	7,087.00	
Tuskegee Institute	2 INST	23,125.00	$33,812.00
Arizona: Arizona State	1 INST	6,000.00	6,000.00
Arkansas: Arkansas, University of	2 INST	15,562.00	15,562.00
California:			
ACS California	1 INST	100,000.00	
ACS Los Angeles	1 INST	40,000.00	
California Institute of Technology	1 INST	10,000.00	
Institute of Medical Research	2 INST	15,000.00	
Mercy Hospital	1 INST	10,000.00	
Mt. Zion Hospital	3 INST	20,250.00	
Stanford University	1 INST	10,000.00	
University of California	{3 INST	150,000.00	
	{6 F	25,068.70	
University of Southern California	1 INST	15,822.00	396,140.70
Colorado: Colorado, University of	{1 GIA	2,500.00	
	{2 INST	45,000.00	47,500.00
Connecticut: Yale University	{1 F	4,250.00	
	{3 INST	54,500.00	58,750.00
Delaware: Delaware, University of	1 INST	4,800.00	4,800.00
District of Columbia:			
George Washington University	{1 F	3,500.00	
	{3 INST	45,000.00	
Howard University	2 INST	35,000.00	
National, Academy of Science	2 INST	5,000.00	
Childrens Hospital	1 INST	7,500.00	96,000.00
Florida:			
Florida Southern College	1 INST	2,215.00	
Florida, University of	2 INST	60,000.00	
Miami, University of	1 INST	75,000.00	137,215.00
Georgia:			
Medical College of Georgia	1 F	3,156.25	
Emory University	1 INST	10,000.00	13,156.25
Idaho:			
University of Idaho	1 INST	18,000.00	
St. Luke's Hospital	1 INST	2,000.00	20,000.00
Illinois:			
Chicago Tumor Institute	1 INST	25,000.00	
University of Chicago	{5 F	21,243.44	
	{3 INST	187,000.00	
M. Reese Hospital	1 INST	10,000.00	243,243.44
Indiana:			
Indiana University	2 INST	27,500.00	
University of Notre Dame	2 INST	45,000.00	72,500.00
Iowa: Iowa, State University	2 INST	8,600.00	8,600.00
Kansas:			
Kansas, University of	{2 F	6,750.00	
	{1 INST	25,000.00	
St. Margaret's Hospital	{1 F	4,000.00	
	{2 INST	8,000.00	43,750.00
Kentucky:			
Kentucky Cancer Mobile	1 INST	10,000.00	
University of Louisville	1 INST	10,000.00	
Ursuline College	2 INST	4,000.00	24,000.00
Louisiana: Tulane University	{1 GIA	5,000.00	
	{1 INST	15,000.00	20,000.00
Maine: Jackson Memorial Laboratory	1 INST	50,000.00	50,000.00

See footnotes at end of table.

Geographical breakdown of allocations Mar. 1, 1952—Continued

	Symbols [1]	Total institution	State total
Maryland:			
John Hopkins University	1 F	$4,161.70	
	2 INST	60,000.00	
University of Maryland	1 INST	25,000.00	
ACS Maryland Division	1 INST	26,000.00	
Carnegie Institute of Washington	1 GIA	1,597.00	$116,758.70
Massachusetts:			
Beth Israel Hospital	3 F	13,250.00	
Brigham Hospital	4 F	15,500.01	
Massachusetts Memorial Hospital	1 F	4,250.00	
Free Hospital (women)	1 INST	5,500.00	
Harvard Medical school	2 INST	20,000.00	
Massachusetts General Hospital	4 F	20,500.00	
	4 INST	128,197.00	
Massachusetts Institute of Technology	1 INST	5,000.00	
NE. Center Hospital	4 F	21,250.00	
Pratt Diagnostic	5 F	19,574.50	
Boston City Hospital	4 F	20,678.12	
Tufts College	6 F	28,750.00	
	4 INST	70,364.00	
University of Massachusetts	1 INST	3,000.00	
Worcester Foundation for Experimental Biology	2 INST	19,500.00	395,313.63
Michigan:			
Detroit Institute	1 INST	25,000.00	
University of Michigan	2 INST	14,884.00	39,884.00
Minnesota:			
University of Minnesota	7 F	31,000.00	
	3 INST	65,000.00	
St. Scholastica College	1 INST	4,000.00	100,000.00
Missouri:			
St. Louis City Hospital	1 F	4,000.00	
St. Louis University	3 INST	61,000.00	
Washington University	3 F	1,500.00	
	1 GIA	8,000.00	
	3 INST	38,640.00	123,140.00
Montana: Montana, University of	1 INST	11,300.00	11,300.00
Nebraska: Nebraska, University of	2 INST	20,000.00	20,000.00
Nevada: Nevada, University of	1 INST	5,000.00	5,000.00
New Jersey:			
Princeton University	1 GIA	1,000.00	
Rutgers University	4 INST	43,592.00	44,592.00
New Mexico: New Mexico, University of	2 INST	9,600.00	9,600.00
New York State:			
Buffalo General Hospital	2 F	7,000.00	
	1 INST	12,960.00	
Bassett Hospital	1 F	4,250.00	
University of Rochester	2 INST	38,146.00	
Trudeau Foundation	2 INST	20,028.00	82,384.02
New York City:			
Columbia University	11 F	56,961.45	
	6 INST	118,580.00	
Committee for the Promotion of Medical Research	1 INST	10,000.00	
Cornell University	1 F	4,019.15	
ACS (N. Y. C.)	5 INST	880,000.00	
American Museum of Natural History	4 INST	45,000.00	
Fordham University	2 INST	17,450.00	
Harlem Hospital	2 INST	15,000.00	
Hickrill Chemistry Research	1 INST	8,200.00	
Lenox Hill Hospital	1 INST	10,000.00	
Memorial Center	41 F	193,546.11	
	8 INST	253,240.00	
Montefiore Hospital	2 INST	17,500.00	
New York Academy of Science	2 INST	14,000.00	
New York Medical College	2 INST	13,300.00	
NYU-Bellevue	7 INST	81,725.00	
	1 F	6,000.00	
Rockefeller Institute	1 F	4,000.00	
New York City College	1 INST	1,000.00	
St. Luke's Hospital	3 INST	12,000.00	
St. Vincent's Hospital	2 INST	17,500.00	
Brooklyn Cancer Institute	1 F	4,500.00	
St. Catherine's Hospital	1 INST	10,000.00	
Jewish Hospital	1 INST	10,000.00	
New York Zoological Society	1 INST	2,500.00	1,806,121.71

See footnotes at end of table.

Geographical breakdown of allocations Mar. 1, 1952—Continued

	Symbols [1]	Total institution	State total
North Carolina:			
Duke University	1 INST	$50,000.00	
	8 F	35,625.00	
	1 GIA	10,000.00	
University of North Carolina	1 INST	10,692.00	$106,317.00
North Dakota: North Dakota, University of	1 INST	5,000.00	5,000.00
Ohio:			
College of St. Mary of Springs	1 INST	1,500.00	
Institute of Divi Thomae	1 INST	5,000.00	
Jewish Hospital Association	1 INST	14,500.00	
Ohio State University	1 INST	5,850.00	
University of Cincinnati	2 INST	20,000.00	
Western Reserve University	2 INST	27,239.24	74,089.24
Oklahoma: Oklahoma Medical Research Foundation	2 INST	30,000.00	30,000.00
Oregon: Oregon, University of	2 INST	46,000.00	46,000.00
Pennsylvania:			
Immaculata College	1 INST	5,000.00	
Jefferson Medical College	1 F	4,500.00	
	1 INST	4,500.00	
University of Pennsylvania	10 F	42,748.35	
	3 GIA	10,739.41	
	3 INST	23,400.00	
University of Pittsburgh	2 F	8,783.55	
	1 GIA	1,250.00	
	2 INST	20,000.00	145,921.31
Institute of Cancer Research	1 INST	25,000.00	
Rhode Island:			
Brown University	2 INST	10,000.00	
Providence College	1 INST	15,000.00	25,000.00
South Carolina: South Carolina Medical College	1 INST	5,000.00	5,000.00
South Dakota: South Dakota State College	1 INST	2,500.00	2,500.00
Tennessee:			
University of Tennessee	2 GIA	8,660.00	
	1 INST	3,859.00	
Carson-Newman College	2 INST	8,000.00	20,519.00
Texas:			
Foundation of Applied Research	1 INST	20,000.00	
Odessa College	1 INST	1,335.00	
Southwestern Medical College	1 INST	50,000.00	
University of Texas (Anderson Hospital)	1 F	4,250.00	
	2 INST	41,000.00	
University of Texas, Medical Branch	2 INST	10,000.00	126,585.00
Utah:			
University of Utah	3 F	13,500.00	
	1 GIA	1,700.00	
	1 INST	10,000.00	
Utah State Agricultural College	1 INST	2,300.00	27,500.00
Vermont: University of Vermont	1 GIA	5,400.00	5,400.00
Virginia: Medical College of Virginia	1 F	4,000.00	4,000.00
Washington:			
University of Washington	2 F	7,000.00	
	1 INST	25,000.00	
State College of Washington	1 INST	10,000.00	
Seattle University	1 INST	7,000.00	49,000.00
West Virginia: Marshall College	2 INST	7,500.00	7,500.00
Wisconsin: University of Wisconsin	3 GIA	4,500.00	
	1 INST	10,000.00	14,500.00
Wyoming: University of Wyoming	1 INST	2,500.00	2,500.00
		4,749,955.00	4,749,955.00
Foreign:			
Belgium: Institut Jules Bordet	1 INST	10,000.00	10,000.00
Canada: McGill University	1 INST [2]	[2] 10,000.00	
	2 F	7,544.65	[2] 17,544.65
Finland: Cancer Society of Finland	1 INST	5,000.00	5,000.00
England:			
National Institute of Medical Research	1 F	5,500.00	
Imperial Cancer Institute	1 INST	10,000.00	15,500.00
France: Laboratory de Genetizue	1 INST	10,000.00	10,000.00
Ireland: Cancer Association	1 INST	10,000.00	10,000.00

See footnotes at end of table.

Geographical breakdown of allocations Mar. 1, 1952—Continued

	Symbols [1]	Total institution	State total
Foreign—Continued			
Israel:			
Hebrew University	1 INST	$10,000.00	
Weizmann Institute	1 INST	25,000.00	$35,000.00
Italy: University of Bologne	1 INST	5,000.00	5,000.00
Mexico: Hospital de Enfermedades	1 INST	5,000.00	5,000.00
Norway: Norwegian Radium Hospital	1 INST	10,000.00	10,000.00
Scotland: Royal Infirmary	1 INST	10,000.00	10,000.00
Sweden:			
Nobel Medical Institute	1 F	6,750.00	
Radiumhermit	1 F	4,000.00	
Karolinskal Institute	1 F	2,250.00	13,000.00
		151,044.65	151,044.65
Total United States			4,749,955.00
Total foreign		[2]	141,044.65
			4,890,999.65
Cost of fellowship		3,241.11	
Seminar		2,550.22	
Interest on fellowship funds invested		690.89	
		4,688.70	5,379.59
Balance pending allocation			
Total United States and foreign			4,896,379.24

[1] Symbols:
F—Fellowship.
GIA—Grant in aid.
INST—Institutional research grant.

[2] $10,000 returned by McGill University Canada.

DAN PARKER,
President.
WALTER WINCHELL,
Treasurer.
LEO LINDY,
Vice-President.

ACCOUNTANTS REPORT, DAMON RUNYON MEMORIAL FUND FOR CANCER RESEARCH, INC., NOVEMBER 30, 1951

SCHARF & GEIST,
CERTIFIED PUBLIC ACCOUNTANTS,
551 Fifth Avenue, New York, January 3, 1951.

DAMON RUNYON MEMORIAL FUND FOR CANCER RESEARCH, INC.,
235 East Forty-fifth Street, New York 17, N. Y.

GENTLEMEN: We have examined your accounts and records from July 1, 1951, to November 30, 1951. Edwin J. Fluss & Co., certified public accountants, examined your records from December 1, 1950, to June 30, 1951, and we accepted their findings to that date.

The following is a condensed summary of your cash receipts and disbursements:

	Year ended Nov. 30, 1951	5 years ended Nov. 30, 1951
Receipts:		
Cash contributions	$1,332,248.74	$4,999,915.91
Contests	21,888.82	511,833.05
Securities		159,067.35
Gain on sale of securities		23.18
Total receipts	1,354,137.56	5,670,869.49
Disbursements: Distribution to hospitals, universities, etc., for cancer research	1,228,774.24	4,626,298.24
Excess of receipts over distributions	125,363.32	1,044,571.25
Cash balance at beginning	919,207.93	
Undistributed cash balance Nov. 30, 1951	1,044,571.25	1,044,571.25

The above amount was on deposit with the Irving Trust Co., 51st St. and Rockefeller Plaza:

Regular account	$1,038,636.13
Theater account	5,935.12

In our opinion, the foregoing reflects the cash receipts as recorded and your cash disbursements for the year ended November 30, 1951.

Respectfully submitted.

SCHARF & GEIST.

DAMON RUNYON MEMORIAL FUND FOR CANCER RESEARCH, INC.

Contributions received year ended Nov. 30, 1951

Individuals, $1,000.00 and over each	$134,857.42	
Individuals, under $1,000.00 each	190,208.04	
		$325,065.46
Organizations, groups, etc., $1,000 and over	239,234.04	
Organizations, groups, etc., under $1,000 each	302,339.75	
		541,573.79
Radio and television		205,643.73
Fifteen bequests		60,222.53
Theater ticket contributions		185,512.75
Royalties		2,587.20
Miscellaneous		11,643.28
Total contributions received		1,322,248.74
Contests:		
Buick safety slogan	$20,972.06	
Macy's name the fish	916.76	
		21,888.82

Distributions made for cancer research year ended Nov. 30, 1951

University of Michigan, Ann Arbor, Mich	$7,000.00
University of Minnesota, Minneapolis, Minn	15,000.00
Johns Hopkins University, Baltimore, Md	10,000.00
Harlem Hospital, New York City	5,000.00
Hospital de Enfirmedades de la Nutricion, Mexico	5,000.00
Providence College, Providence, R. I	15,000.00
Brown University, Providence, R. I	5,000.00
Mount Zion Hospital, San Francisco, Calif	20,250.00
University of Delaware	4,800.00

Distributions made for cancer research year ended Nov. 30, 1951—Continued

University of Massachusetts Experimental Station	$3,000.00
University of New Mexico, Albuquerque, N. Mex	9,600.00
University of Florida, Gainesville, Fla	10,000.00
Columbia University, New York, N. Y	93,680.00
Memorial Hospital, New York City	55,000.00
St. Vincent's Hospital, New York City	7,500.00
College of St. Scholastica, Duluth, Minn	4,000.00
Carson-Newman College, Tenn	3,000.00
New York University, Bellevue Medical Center, New York City	60,502.00
Montefiore Hospital, New York City	7,500.00
St. Luke's Hospital	12,000.00
Howard University Medical School, Washington, D. C	10,000.00
University of North Dakota, Grand Forks, N. Dak	5,000.00
University of Pennsylvania, Philadelphia	8,200.00
University of Chicago, Chicago, Ill	25,000.00
California Institute for Cancer Research, Los Angeles, Calif	25,000.00
Massachusetts General Hospital, Boston	25,000.00
Research Foundation of Children's Hospital, Washington, D. C	7,500.00
Foundation of Applied Research, San Antonio, Tex	20,000.00
Massachusetts Institute of Technology, Cambridge	5,000.00
State University of Iowa, Iowa City	8,600.00
University of Wyoming, Laramie, Wyo	2,500.00
Hebrew University, Hadassah Medical School, Israel	10,000.00
Cancer Asociation of Ireland	10,000.00
Radium Institute Oslo, Norway	10,000.00
Imperial Cancer Research Fund, London	10,000.00
University of Bologna	10,000.00
Royal Infirmary, Scotland	10,000.00
South Dakota State College, Brookings, S. Dak	2,500.00
Oklahoma Medical Research Foundation, Oklahoma City	5,000.00
Society for Experimental Biology and Medicine, College of the City of New York	1,000.00
Rutgers University, New Brunswick, N. J	28,592.00
Weizmann Institute of Science, Israel	25,000.00
University of Brussels, Institute Jules Bordet	10,000.00
Free Hospital for Women, Brookline, Mass	5,500.00
Stanford Research Institute, Stanford, Calif	10,000.00
University of Buffalo, Buffalo, N. Y	12,960.00
University of Nebraska	10,000.00
Washington University of St. Louis, St. Louis, Mo	13,640.00
Hickrill Research Foundation, New York City	8,200.00
Worcester Foundation for Experimental Biology, Worcester, Mass	10,000.00
New York City Cancer Committee	100,000.00
Lenox Hill Hospital, New York City	10,000.00
George Washington Carver Foundation, Tuskegee, Ala	13,125.00
University of Colorado, Denver, Colo	20,000.00
Lobund Institute of Notre Dame, Ind	20,000.00
University of Pittsburgh, Pa	10,000.00
Marshall Research Institute, Huntington, W. Va	7,500.00
Mercy Hospital, San Diego, Calif	10,000.00
Florida Southern College	2,215.00
University of Texas	35,000.00
Indiana University Medical Center	7,500.00
University of Arkansas	5,562.00
Tufts College Medical School, Boston, Mass	5,000.00
Institute of Medical Research, Cedars of Lebanon Hospital, Los Angeles, Calif	10,000.00
University of Louisville, Ky	10,000.00
Yale University School of Medicine, New Haven, Conn	4,500.00
Fordham University, New York City	5,450.00
University of Southern California, Los Angeles	15,822.00
University of Rochester, Rochester, N. Y	18,146.00
University of Paris	10,000.00

Distributions made for cancer research year ended Nov. 30, 1951—Continued

St. Louis University, St. Louis, Mo	$51,300.00
New York Academy of Sciences, New York City	14,000.00
Strang Prevention Clinic, Memorial Center, New York City	11,400.00
Western Reserve University, Cleveland, Ohio	7,239.24
California Institute of Technology, Pasadena, Calif	10,000.00
New York Medical College, Flower and Fifth Avenue Hospital, New York City	4,800.00
University of North Carolina, Chapel Hill, N. C	10,692.00
George Washington University, Washington, D. C	10,000.00
National Academy of Sciences, National Research Council, Washington, D. C	2,500.00
University of Cincinnati, Ohio	10,000.00
McGill University, Montreal, Canada	10,000.00
Sloan-Kettering Institute, New York City	3,840.00
St. Margaret's Hospital, Kansas City, Kans	4,000.00
University of Tennessee, Memphis, Tenn	3,859.00
College of St. Mary of the Springs, Columbus, Ohio	1,500.00
Duke University, Durham, N. C	50,000.00
Jefferson Medical College and Hospital, Philadelphia, Pa	4,500.00
Utah State Agricultural College, Logan, Utah	2,300.00
Total distributions made for cancer research	1,228,774.24

CANCER FUNDS

The combination of public and private effort in the fight against cancer stimulated national interest and resulted in an increase in both private and public funds.

Appropriations, year ending June 30, to National Cancer Institute, U. S. Public Health Service

Year	Amount	Cancer research construction funds	Campaign contributions, year ending Aug. 31, to American Cancer Society
1938	$400,000		$133,487.52
1939	400,000		171,020.76
1940	570,000		210,165.78
1941	570,000		377,388.07
1942	565,000		285,467.89
1943	534,970		372,057.17
1944	530,000		832,862.00
1945	561,000		4,292,491.56
1946	548,700		10,106,706.92
1947	1,772,000		12,126,875.30
1948	[1] 14,500,000	[6] $2,303,000	13,221,068.76
1949	[2] 14,000,000	[2] 8,000,000	13,596,661.54
1950	[3 4] 18,900,000	[2] 6,000,000	[7] 13,950,000.00
1951	[5] 20,086,000		
Total	73,937,570	16,303,000	69,676,313.27

[1] Includes construction cash of $2,303,000.
[2] Contract authority.
[3] Does not include construction authorization.
[4] Includes $4,175,000 to liquidate construction authority.
[5] Includes $5,000,000 to liquidate construction authority; $4,825,000 remains to liquidated.
[6] Cash.
[7] Estimate.

Total of National Cancer Institute and American Cancer Society from 1938	$143,613,883.27
Atomic Energy Commission cancer fund, 1948–51	11,087,000.00
Damon Runyon Memorial fund, 1947–51	3,067,574.00
Jane Coffin Childs memorial fund, 1937–50	1,845,111.41
Total of major agencies in cancer program	159,613,568.68

CANCER RESEARCH PROGRAMS

Mr. TEETER. I need not elaborate much beyond that record. There are a few things that I would like to summarize as I have heard the discussion.

Senator Chavez, you asked about the amount of money in cancer and in cancer research in particular. In the 12-year term that I have been watching it, I believe that figure is about $200 million. That is the total amount of money put into the program by the agencies listed there, of which about $85 million is private and $115 million is Government.

About one-fourth of that reached cancer research channels or was devoted to cancer research. The difference between the public and private is largely the funds for construction. You gentlemen understand that in private agencies we cannot undertake construction.

CONSTRUCTION OF RESEARCH FACILITIES

I would most heartily support the addition of the construction item to the present request.

I particularly would like to point out that, to date, 63 grants on 55 projects in 47 institutions, representing 27 States, have been made for construction purposes. I just received this tabulation from Dr. Heller. There are a few States yet to be represented in this construction program. New Mexico is one of them.

I know, Senator Chavez, that after a recent conference with Professor Reyniers of Notre Dame that there are projects to be considered in New Mexico. I understand he and I are going out there in about a month to evaluate the cancer research potential.

Senator CHAVEZ. I know we will be most happy to see you there.

Mr. TEETER. We have a small project out there now.

Senator Ecton, I think you know that just last week we made a grant of $11,300 from the Runyon fund to the University of Montana for the work of Dr. Loran. This is the first grant made in Montana and we are very happy about it.

Senator ECTON. We are very happy about it, I assure you, and I honestly believe it will be put to very good use.

Mr. TEETER. Your State is also one of the States that has not had the opportunity to share in the construction moneys. There are grants in Georgia, Alabama, Virginia, Minnesota, California. They are the States represented by the other committee members.

I do believe you will find additional construction money is needed for those States who were a little late in getting their cancer research development started.

I would like to go one step further in speaking about the Runyon fund, because we are, in the Runyon fund, slightly different than the other people in cancer because all the money that we raise is used for cancer research.

We believe that in seeking the cause and control of cancer, the end product, which is the terrible human and economic loss, may best be conquered.

Two hundred thousand people die each year of cancer and a terminal case is 100 days in the hospital and the cost is $15 a day, gentlemen, that is a total cost of $300 million a year.

So it would be useless for anyone to promise to pay those bills. It would be far more sensible for an agency to say, "We are going to try to seek the cause and control and stop that cost."

CANCER FUND CONTRIBUTIONS

That is the function of the Runyon fund. Because of the way we are set up, we are unorthodox in our fund raising. We do not have a campaign. We raise funds by special events.

Tomorrow night I hope to be in San Francisco, where Sugar Ray Robinson is defending his title for $1, and the balance is for the Runyon fund, to be used for cancer research in that area. That is the way we raise our funds. We raise quite a lot from Broadway theater tickets, about $315,000, so far.

There is also Mr. Berle's 24-hour telethon show.

These are the unusual methods which, I think, alert the people. We, in turn, distributed these funds in 46 out of 48 States. If New Hampshire and Mississippi can only be urged to submit requests, I think we will do something there.

I believe that another aspect of the Runyon fund is the nature of its grant program. Our doors are open every day in the year for requests for fellowships and grants-in-aid. We have a committee composed of four doctors and four Ph. D.'s who review our program monthly. We act within 60 days. You either get no or yes from the Runyon fund in 60 days' time.

So we may be considered to be the venture capital in the business, the agency that makes the grant and then sees that it is followed up so that the other agencies may come along and support it later.

Naturally, we do carry on projects for long periods of time and always hope to do so, but somebody must be there to act promptly.

That is the function of the Runyon fund and the way it is designed and can operate.

I would like to say a good word for the institutional grant. In making the grant to the institution, you make the grant to the institution for the work of an individual in the institution, with the greatest leeway on the work to be undertaken. Certainly the institutional project is clearly defined as to projects and budgets, but yet it is supported and will continue to be supported.

I would like to say also that the Runyon fund has been developing and is expanding the program of cancer research beds. This is not the care of indigent patients, but the care of the individual, where the scientist and the doctor, work in an institution together with the end product, the patient.

If the patient's case is of an unusual nature, the costs for this extended scientific and medical study that you have seen here do not have to be borne by the patient, but can be charged to the fund. There we have research at the human level and it can be carried in the fund. I think that is a new way of getting to the patient, getting beyond the test tube and the animal to the end product.

I would very strongly endorse the request for the allocation for cancer cure studies. You will find that I advocated this in my testimony of last year and the year before. I am very much interested in that program. We lose down the rat hole of so-called cancer cures more than we do in actual expenditures for research today.

Gentlemen, I regret to say that three of your own members here have publicly advocated cancer cures.

This gets serious. The Runyon fund perhaps is more concerned than anybody else, because we get in our mail and in Mr. Winchell's mail all the problems that people think can be solved by getting just a little off the beaten path. Anything that you gentlemen can do to help us to fight, track down and to study every possible so-called cancer cure will be a great assistance to us and will save a lot of money for innocent people. It is not so much the money that they spend in following some of these cures, but the irreplaceable part is the time lost when a patient should be in the care of somebody who knows what he is doing. But always the burden of proof must be on those who claim cures.

That is the important part, that time is irreplaceable; the money you can lose.

So I would again ask that you Senators give this generous consideration and push it, if you can, because we need it. If you will give us financial support, both the columns and radios will track them down and talk to them in their own language, I assure you.

But every day innocent people come and say, "What should I do?"

I have taken a very considerable amount of your time. I do thank you for the opportunity to appear here, and I want to say to you the Runyon fund will be in there pitching to help out as a private agency.

We do endorse most heartily the work of the National Cancer Institute and the increase of the budget requested.

Senator CHAVEZ. Thank you, Mr. Teeter.

NATIONAL CANCER INSTITUTE

STATEMENT OF JOHN R. HELLER, JR., DIRECTOR, NATIONAL CANCER INSTITUTE

Senator CHAVEZ. Dr. Heller, may I ask you a question?

Dr. HELLER. Certainly, sir.

Senator CHAVEZ. Of course, you heard the professional testimony given by the individual witnesses. The question I am going to ask is not based upon the fact that I do not believe them, or for you to disagree with them whatsoever, but, would you not, from the professional standpoint, as an official of the Government, agree generally with the statements made here this morning?

Dr. HELLER. I do very definitely, Mr. Chairman. I am very gratified and want to express my appreciation for the very clear, stimulating, and certainly generous discussion that these gentlemen gave. I agree with it wholeheartedly.

Senator CHAVEZ. I also want to thank Senator Ecton here for being able to be with the committee this morning. I think this is one of the best hearings we have had yet.

Senator ECTON. Mr. Chairman, may I most respectfully say that I would have been with you every morning, but, unfortunately, I had from two to three other committees to attend, and I just find it impossible to get around to all of them.

Senator CHAVEZ. We will stand recessed until 2:30 p. m.

AFTERNOON SESSION

The subcommittee reconvened at 2:30 p. m., upon the expiration of the recess.

Senator CHAVEZ. This afternoon the committee will hear witnesses in the matter of mental health.

I would like to call on Mr. Ben May, of Alabama. You may proceed, Mr. May. You have been before the committee before. We are very informal, so you proceed in your own way.

MENTAL HEALTH ACTIVITIES

STATEMENT OF BEN MAY, NATIONAL MENTAL HEALTH COUNCIL, MOBILE, ALA.

MENTAL DISEASE OF MILITARY VETERANS

Mr. MAY. My name is Ben May. I live in Mobile, Ala. I am on the National Mental Health Council and I am a lumberman.

In business I am president of the Gulf Lumber Co., of Mobile, Ala.

I want to say at the outset I do not see how anyone can deny the importance of research for the military in this day and time. If I contrast even slightly the expenditures, it is always with the realization of the importance of the research for the military. A modern army must have guns and tanks and various types of modern equipment of the best design. That does not alter the fact that the armed services function through men and it is men who are healthy in mind and body who make the finest soldiers.

More men were rejected in the draft and released from the armed services after induction because of mental troubles than were represented by all of the men that the Army sent to the Pacific theater of action.

That gives an idea of the relationship of this problem of the mental diseases to the Government's problem of men for the Army.

Our various States spend over $500 million a year caring for the mentally ill. Scores of thousands of able-bodied people work in these institutions. We lose their services elsewhere because they are needed for this work.

In addition, the Government spends over $480 million yearly for pensions to neuropsychiatric veterans and for the care of the mentally ill veterans who are in Government hospitals. The total expenditure by States and governments is over $1 billion per annum, and represents only part of the cost of caring for the mentally ill. The total economic drain on the country occasioned by mental illness will run to several billions of dollars each year.

The results of research already conducted show that various kinds of mental diseases can be controlled or cured, but despite this proof of the financial profits from research into the mental diseases, the Nation as a whole spends only about $4 million per year for research concerning the mental diseases.

To a large extent we depend on accidental discoveries to find new ways to cure our mentally ill. I am convinced that if the directors of the du Pont Co. were running our country, and if they wanted it to be a richer Nation, the first step of these du Pont directors in the management of our Nation would be to decrease expenditures for industrial research, if that were necessary, so as to be able to increase greatly

the expenditures for medical research, including particularly a big increase allocated to research into mental diseases.

MEDICAL RESEARCH DISCOVERIES

I want to mention some of the savings that have already come to our Nation through medical research discoveries which could be applied to the cure of the mentally ill.

Formerly a certain percentage of the insane in the asylums were there because they had pellagra, and it in turn caused their hallucinations.

When it was found that pellagra could be cured by the use of the chemical nicotinic acid, certain doctors wrote to the State institutions to seek out those who were crazed because of pellagra, and to give them nicotinic acid.

A person crazed by pellagra may do the following: He imagines that those about him want to kill him. He sees animals and actually feels them crawl on his body, and he is too irrational to follow the instructions of a doctor.

Yet such people have been restored to normal within 48 hours merely by giving them a few cents worth of nicotinic acid. You see at once that it is cheaper, and, of course, you know it is more humane to cure these people than it is to keep them in State institutions.

A number of years ago a fair percentage of those in the insane asylums were there because of paresis, which is an illness brought on by syphilis.

During the past few years there has been a tremendous drop in the number of insane in the asylums who are there because of syphilis, and we can credit a great part of this saving in money and in grief to the medical research discovery, penicillin.

We have a fairly large percentage of alcoholics in the asylums. I think the first admissions represent about 10 percent of all the admissions, alcoholics alone; yet the research workers have already done such work to indicate that some of these alcoholics can be helped tremendously by diet and by vitamins.

We shall very likely learn how to aid other types of alcoholics by the use of hormones, but it will take careful research because they are powerful and at times dangerous medicine unless proper careful use of them is made.

Recently surgeons have learned how to remove different glands from humans and at the same time enable them to live normal lives. This is an extra tool in the hands of research workers which within the next several years is almost certain to permit them to show that certain types of insanity came from malfunctioning of certain particular glands.

TRAINING OF RESEARCH WORKERS NEEDED

The research workers also have hormones which they can use as tools. The chance to do this great work is now here, but what is lacking is money. Money is needed to train more research workers. It is needed to pay the research workers already available and other money may be needed for buildings or laboratories.

As Mr. Alfred Sloan has stated, we cannot get the ultimate results in research unless we have proper laboratory facilities.

What is a research laboratory? It is a factory to produce knowledge. In a shoe factory the worker uses machinery to enable him to turn out more shoes per man-hour of labor. In a knowledge factory, or research laboratory, as we call it, we use modern scientific equipment to enable the research workers to produce more knowledge, more facts per man-hour of labor.

Research laboratories have become more vital than ever, because, thanks to the scientific progress of the past generation, we now have equipment which permits the research worker to do many things heretofore completely impossible of achievement.

Modern scientific equipment is often expensive and it must be housed, but with it the output of a research worker may be increased more than a hundredfold, and as I have said, this modern equipment enables the worker to do things heretofore considered impossible.

I am a layman. I have enough intelligence to appreciate the importance of medical research, but I am not learned enough to be a medical research worker. But I do predict with almost religious fervor that unbelievably great things are possible for us within the space of only a few years' time if we will but channel a fair proportion of our research effort toward the conquest of the goals of mankind.

EFFECTS OF RESEARCH IN UNITED STATES HISTORY

I should like to contrast some different types of progress we have made since 1776. That is about the time our country came into being. In warfare of that period gunpowder was so poor that a man was in little danger at 250 yards.

Fortunately for us as a nation the great French chemist, Lavoisier, began to improve the methods of manufacture of gun powder shortly before the revolution and it was French gun powder which helped carry us to victory.

That is, it was French gun powder plus the courage of our men.

Now we have progressed, if you call it progress, from gun powder to dynamite and TNT and finally to atomic bombs. That progress came in large part because the money was furnished the research men who worked to solve these problems for the military. I again remind you that the Government only can spare $2 million a year for research into the mental diseases, or at least it thinks it can only spare $2 million for mental research.

Yet I repeat more men were lost to the services from mental disease than the Army sent into the Pacific theater of war.

In 1776 man's fastest means of travel was the sailboat and the horse. Since then we have achieved the modern turbine steamboat, the railroad and Diesel engine, the streetcar, the automobile, the airplane, and, finally, the jet plane. That progress came not only because the problems involved may have been easier of solution than are some of the problems of medical research, but the progress came in large part because such tremendous sums of money were placed at the disposal of research workers interested in problems relating to improvements of transportation.

For example, the oil companies spend over a hundred million dollars a year on their research. Our entire Nation spends $4 million a year on research into the mental diseases.

In 1776 if a man had a cold, he could wipe his nose on his sleeve. You probably did it as a boy, Senator. Today he can blow his nose with Kleenex and that is about the extent of our progress in treating colds.

In 1776 a doctor could not predict whether or not a man was liable to have a coronary attack the next day. Today the doctor is still unable to predict in that manner.

Two hundred million dollars for an aircraft carrier is a lot of money, and I am one that believes that we need them, yet as a country we feel unable, or so far we have appropriated less than $18 million for research into the various diseases that the Public Health Service looks after.

In some types of mental disease we have progressed since 1776, but compared to the progress in the making of explosives and in the means of transportation, progress in medicine and in understanding the mental disease, has been slow.

It is true that to understand the body and the mind is much more difficult than to understand machinery or to understand the chemistry of industry.

But understanding the body and mind is infinitely more important than having better and better gasoline and improved cellophane. We can solve many of these problems by solving bodily and mental health and consequently often solving the well-being of our country.

But we can achieve these results with reasonable speed only if we furnish funds and facilities to the medical research workers.

I would like to mention that Standard Oil of New Jersey spent more in 3 months on its research than our whole Nation, Government and private individuals spend on research into the mental diseases.

We are afraid of inflation and rightly so. Yet, I would like to mention Mr. Henry Ford. He and his son control the company with over $100 million cash on hand. It had over a billion dollars of assets. Yet as far as Mr. Ford was concerned his money was valueless because when his son Edsel had cancer, although he could hire 10,000 or 20,000 doctors the answer was not in the books.

The doctor works with what the research people put into the reservoir of knowledge. He can draw on that. But if nothing is in it, then the doctor is powerless, whether it is his own son, his best friend, or the richest man on earth.

What is a happy people? We constantly hear we have about 6 or 7 percent of the world population and similar percent of its area and that we manufacture half of the products of the world. We have over half of the telephones, the radios, television sets, automobiles, and God knows what.

But the people of Asia do not seem anxious to follow us, and I wonder sometimes if it can be because they think we emphasize too many things and do not show the fact that we have a great interest in people also.

We have 650,000 people with cancer in this country. They and those who love them cannot be called too happy.

MENTALLY ILL PATIENTS

We have over one million mentally ill now, seriously ill, beside those with minor illnesses.

We have to get new discoveries. We have 9 million heart sufferers to a greater or lesser degree. They claim there are 11 million arthritics and neuritis sufferers.

I would like to mention just one type of suffering not related to this. We have 400,000 children whom we call spastics. That means there are a million unhappy people if you count the child and the parent.

The other day a parent said to me, "I wonder when my time comes if I know I am going to die will I have the courage to kill my child rather than have it go into an institution."

You have a mother who cannot function properly for the rest of her children. You have a father who cannot work properly because he is worried. Those are things that a kind God is interested in.

In these asylums terrible things are happening. They are getting better, but they are still bad. As a rule we do not know about it. The State legislatures are busy. They do not go to the insane asylums.

A fellow like myself cannot go because I know I would be torn to pieces for such a long time. It is not only what you see.

One of the men who go there told me the terrible thing is what you smell because these people are not normal. If you sent them to the bathroom, they would use the bathtub instead of using the toilet.

Senator CHAVEZ. You are making a very fine emotional statement, which I think is necessary, but you spoke of the cancer and those who suffer from heart trouble, and those who have trouble with arthritis, neuritis, and other diseases, but who are mentally alert and well.

Do you not think that we, as society as a whole, owe more to the mentally ill than we do to the others, notwithstanding we owe them plenty?

Mr. MAY. Yes, sir.

Senator CHAVEZ. Do you not think the trust that society has toward the mentally ill should be of graver concern than a cancerous person who might be able to gripe or complain?

Mr. MAY. Yes. You are thinking in terms of human beings who are our charge. I agree with you.

The governor of one of the States has said that he is sorry to admit it, but they care for the cows at his institutions better than they do for the human beings.

Missouri had an investigating committee and they came up with that identical statement. The cows are given better attention than the patients are. It is easy to understand.

Senator CHAVEZ. Did you ever investigate the amount of money that Congress appropriates for the diseases of the cow, the diseases of the horse, and of the chicken, as well as the pigs?

Mr. MAY. Yes.

Senator CHAVEZ. And compare that with how much is appropriated to take care of other sicknesses?

Mr. MAY. I blame that on us. All of you are here and are overworked and are very busy. My criticism is you are not quintuplets. You need three of you to legislate for the country, one to look at your constituent's home problems, and another one or two of you to try to understand international affairs.

Senator CHAVEZ. There is a compensating matter that helps us carry on in a humble and meek way and that is there are such persons as Mr. May and many others who without selfishness whatsoever come here and tell us about these things.

Mr. MAY. That is true, and there are a lot more like me at home. They do not take time to come here. Most of the fellows you see are human enough and you hear from them when they are angry or have something at stake.

You hear of the farmer's cattle because he has a State organization, but, unfortunately, there is no lobby to represent human beings as such appear.

You are so busy that unless we write you or remind you or you see some polls such as published in the Scripps Howard papers several years ago—they showed that 60 percent of the people would be willing to pay more taxes to get research into these medical topics.

MODERN SCIENTIFIC EQUIPMENT

I would like to show you some pictures of what the equipment amounts to in regard to the research angle. This equipment that you see in this picture is used for identifying minute amounts of chemicals. It costs $100,000. You cannot see the amount of chemicals because they are so small. They can use a beam of light.

Modern scientific equipment is used to tell the chemical composition there.

This other picture shows an electronic microscope. It costs more than the house that I live in.

Senator CHAVEZ. I only wish we had more newspaper men here and that all of the millions of American people could have heard your statement and that of the fine doctors who appeared this morning.

I think that is one of our troubles. We have not a voice for America.

Mr. MAY. Perhaps you are right.

In regard to this picture that I am showing you now, there are three chemicals involved here. The equipment for research analyses of the urine of a cancer patient costs $10,000. These same problems of hormones are involved with the mental disease.

I would like to show where this money goes to in laboratories. This machine cost $40,000. It is equipped to detect cancer cells.

This other one in this picture cost over $100,000 without installation.

I think I have used enough of your time now. Thank you.

Senator CHAVEZ. Thank you, Mr. May.

Mr. MAY. Tomorrow, Senator, it happens I am testifying again, and at that time I am going to bring up what the polls have said, so that you can see the people are awake.

I would like to mention that following me will be Dr. Maurice Greenhill and Dr. William Menninger. With your permission I would like to introduce the statement of Mr. Arthur Bunker and of Mr. Charles Schlaifer.

Unfortunately they could not be here.

Senator CHAVEZ. We will receive them.

(The material referred to follows:)

MENTAL HEALTH IN AMERICA AT THE CROSSROADS THE LAST 5 YEARS AND THE 5 YEARS TO COME, BY CHARLES SCHLAIFER, NEW YORK, N. Y. (COCHAIRMAN, NATIONAL MENTAL HEALTH COMMITTEE; MEMBER, NATIONAL ADVISORY MENTAL HEALTH COUNCIL, FOUNDING MEMBER, NATIONAL ASSOCIATION FOR MENTAL HEALTH; MEMBER, BOARD OF GOVERNORS, MENNINGER FOUNDATION; PRESIDENT, CHARLES SCHLAIFER & CO., INC., ADVERTISING AGENCY)

For many years was director of advertising and public relations for Twentieth Century-Fox Film Corp. He was the founder and chairman of the first permanent public-relations committee of the motion-picture industry. He was responsible for the promotion of such pictures as "The House on Ninety-second Street," "The Iron Curtain," "Gentlemen's Agreement," and "The Snake Pit." Instructor and lecturer on motion pictures, advertising and public relations.

MENTAL HEALTH NEEDS IN THE LIGHT OF THE PRESENT SITUATION BY ARTHUR BUNKER, NEW YORK, N. Y. (MEMBER, NATIONAL MENTAL HEALTH COMMITTEE; COMMISSIONER, PRESIDENT'S MATERIALS POLICY COMMISSION; PREIDENT, CLIMAX MOLYBDENUM CO.)

Served as Chief of Staff, War Production Board, World War II; board of directors, Lehman Corp.; American Metal Co., Ltd., Firth Sterling Steel & Carbide Corp.; Commercial National Bank & Trust Co. of New York

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MENTAL HEALTH RESEARCH IN AMERICA, WHAT HAS BEEN DONE—WHAT CAN BE DONE, BY BEN MAY, MOBILE, ALA. (MEMBER, NATIONAL MENTAL HEALTH COMMITTEE; MEMBER, NATIONAL ADVISORY MENTAL HEALTH COUNCIL)

COMMUNITY SERVICES AND PREVENTION BY MAURICE GREENHILL, M. D., BALTIMORE, MD. (ASSOCIATE PROFESSOR OF PSYCHIATRY, UNIVERSITY OF MARYLAND MEDICAL SCHOOL; COUSULTANT TO THE SURGEON GENERAL OF THE ARMY; CONSULTANT TO THE SURGEON GENERAL OF THE UNITED STATES PUBLIC HEALTH SERVICE; MEMBER, COMMUNITY SERVICES COMMITTEE OF THE NATIONAL INSTITUTE OF MENTAL HEALTH; MEMBER, THE TRAINING COMMITTEE OF THE NATIONAL INSTITUTE OF MENTAL HEALTH)

TRAINING FOR MENTAL HEALTH, ACCOMPLISHMENTS TO DATE—THE GOALS AHEAD, BY WILLIAM C. MENNINGER, M. D., TOPEKA, KANS. (MEMBER, NATIONAL MENTAL HEALTH COMMITTEE; GENERAL SECRETARY, MENNINGER FOUNDATION, TOPEKA, KANS.; BRIGADIER GENERAL IN THE MEDICAL CORPS, U. S. ARMY, 1942–46; PAST PRESIDENT AMERICAN PSYCHIATRIC ASSOCIATION AND AMERICAN PSYCHOANALYTIC ASSOCIATION; SENIOR CONSULTANT, WINTER VETERANS' ADMINISTRATION HOSPITAL, TOPEKA, KANS.; CONSULTANT FOR NEUROLOGY AND PSYCHIATRY TO THE SURGEON GENERAL OF THE ARMY; CHAIRMAN OF THE SUBCOMMITTEE ON PSYCHIATRY AND NEUROLOGY, COMMITTEE ON FEDERAL MEDICAL SERVICES, HOOVER COMMISSION)

95066—52——55

National Institute of Mental Health

Description	1952 current budget	1953 Budget Bureau estimate	1953 National Mental Health Commission proposal
GRANTS			
1. Grants to medical schools and other institutions and to individuals for research and training:			
(a) Research projects:			
Liquidation cash		$77,000	$77,000
Obligational cash	$1,440,000	1,585,000	[1] 3,423,000
(b) Research fellowships	256,000	250,000	350,000
(c) Expansion of teaching subjects relating to mental illness:			
Liquidation cash	600,000		
Obligational cash	2,023,000	1,850,000	[2] 4,850,000
(d) Training fellowships	1,350,000	1,900,000	[3] 2,500,000
(e) Construction grants for research and training institutes connected with mental hospitals and medical schools			8,000,000
2. Grants to States for case-finding, diagnosis, and other preventive and control services	3,100,000	3,100,000	4,000,000
DIRECT OPERATIONS			
1. Research to be conducted directly by National Institute of Mental Health	800,000	1,305,000	2,000,000
2. Other direct operations:			
(a) Review and approval of research and training grants	125,000	123,000	200,000
(b) Training activities (demonstrations, and in-service training)	104,987	77,000	200,000
(c) Technical assistance to States (consultative service, review and approval of State budgets, demonstration clinic)	415,000	385,000	550,000
Mental health in industry—manpower problems, including alcoholism			300,000
(d) Program direction and administration	305,000	320,000	320,000
Total	10,518,987	10,972,000	26,800,000
Liquidation cash	—600,000	—77,000	—77,000
Construction of research facilities			—8,000,000
Total obligational cash	9,918,987	10,895,000	18,723,000

[1] Includes special project grants of $750,000 in research and treatment of alcoholism, to attack absenteeism.
[2] Includes $1,000,000 for undergraduate medical school grants to extend grants to all medical schools; $2,500,000 to continue on more adequate basis the present graduate training programs; $750,000 to inaugurate new programs such as rehabilitation, specialists, school social work, pastoral counseling; $500,000 for psychiatric aid training; and $100,000 for short-term training institutes.
[3] Includes $1,250,000 for training stipends; $600,000 undergraduate training; and $50,000 short-term institutions.

MENTAL HEALTH IN AMERICA AT THE CROSSROADS—THE LAST 5 YEARS AND THE 5 YEARS TO COME, BY CHARLES SCHLAIFER, NEW YORK, N. Y. (COCHAIRMAN, NATIONAL MENTAL HEALTH COMMITTEE; MEMBER, NATIONAL ADVISORY MENTAL HEALTH COUNCIL; FOUNDING MEMBER, NATIONAL ASSOCIATION FOR MENTAL HEALTH; MEMBER, BOARD OF GOVERNORS, MENNINGER FOUNDATION; PRESIDENT, CHARLES SCHLAIFER & CO., INC., ADVERTISING AGENCY)

Another year has intervened since we were last before you to discuss the budget for the Institute of Mental Health. I would like to preface my statement by saying that I personally am well aware of the problems besetting this committee, the Congress of the United States, and we, the people of the United States: and one of those problems simply stated is, "How can we get enough money to properly defend our country and at the same time take care of all of the needs of our Government and our people without crippling the country with burdensome taxes?" At the same time, and this is part of my conditioning, I feel that the mere expenditures of large sums of money does not solve any problems, but rather creates them and the idea of just spending money for the custodial care of the mentally ill is an anathema to me.

Now that is why our committee feels so grateful to you gentlemen and the Congress of the United States for having had the judgment, the foresight and the intelligence to have passed the Mental Health Act and to establish the National Institute of Mental Health. I think it is proper that those of us who are aware of what has been done and those of us who are concerned with this

terrible plight that besets our fellow men should come before you not just to petition but to bring out what you have done and to thank you. You can point with pride to the accomplishments of the National Institute of Mental Health created by an act of the Congress of the United States.

In the training of people to be skilled in the treatment of mental illness, the Congress has made an historic contribution. Over the past 5 years, our funds have trained more than 300 desperately needed psychiatrists, in addition to 1,400 psychiatric nurses, clinical psychologists, and social workers. It is deeply stimulating to note that 93 percent of the people trained with this money have gone into public mental health work—a fitting tribute to the intent and purpose of the whole program. Equally important, a great number of these people are now qualified to teach their skills to an oncoming group of applicants. We have taken a significant step forward in tooling up the psychiatric teaching plant which must turn out a greatly increased number of psychiatric practitioners in the years to come.

Of great significance, too, are the funds you have appropriated to the medical schools to promote the teaching of psychiatry at the undergraduate level. Before this program got under way 3 years ago, a majority of medical schools in this country didn't even have a full-time instructor in psychiatry. Today 8,500 to 9,000 doctors who have graduated into practice have had some training under this program, while 13,000 medical students now in school are being taught the fundamentals of psychiatry. The importance of this project cannot be exaggerated. With only 5,000 psychiatrists in active practice, the average family doctor must of necessity be the front-line fighter in the battle to prevent serious mental illness.

National Institute of Mental Health funds are also being used to finance 1- and 2-week seminars to train general practitioners, nurses, teachers, and religious and community leaders in the fundamentals of good mental health practice. Under this program, 18,000 people have already been trained in this vital work.

You have stimulated a burgeoning interest in the whole field of psychiatry. Eloquent testimony to this is the fact that the Mental Health Institute now receives twice as many training applications as it can fill with the limited money it received from the Congress. A few years ago, you would frequently hear the comment: "But where will you get the people for this work? They are not interested in going into it." Today, the young people are clamoring for entrance into this challenging field, and it is a crying shame we have to turn half of them down due to lack of funds.

In grants to the States for clinics and preventive mental health services, you have blazed a series of new pathways. In more than half of the States, Mental Health Institute funds made it possible to start a mental health program where none had existed before. You have brought about the creation of 100 new clinics and the expansion of several hundred existing clinics. Of those treated in these clinics, 75,000 were children whose whole future usefulness as citizens depends on proper guidance now.

Yours has not been a give-away program. On the contrary. Five years ago, for every $2 the Federal Government appropriated for clinics and preventive mental health services, State and local governments appropriated $1. Last year for every $2 of Federal Government money, State and local governments appropriated $5—nearly three times the money appropriated by the Congress. Furthermore, 25 mental health clinics partially supported in the past few years by Federal money are now off the Federal payroll; they are now totally supported by State and local moneys. This is but one of a number of examples attesting to the soundness of the National Institute of Mental Health program: each year, its grant-in-aid dollars reap a larger return in State and local expenditure and that is our aim for the future.

This series of accomplishments, while they give a feeling of pride, also give us pause to say and to think, "Well, this we have done. What about the job that is not done?"

What about the hundreds of thousands of our fellow Americans, our friends, our neighbors who are incarcerated in mental hospitals? What are we doing for them?

What about the more than a billion dollars a year it costs?

What about the fact that in these precarious times we need every single man and woman, boy and girl, to help in the common struggle to maintain democracy—to protect our democratic way of life?

What are we doing about the 2,500,000 men and women lost to us in World War II because of mental illness?

What are we going to do about the fact that each year custodial care alone has increased more than $50,000,000 over the year before?

This is the problem that besets us today. We know that 675,000 people are in the tax-supported mental hospitals. We know that this figure will increase, but we also know what has been accomplished and we also know what can be accomplished.

Let's just look at what research has done. It is a common fact today that admissions to mental hospitals for general paresis due to untreated syphilis are approaching the vanishing point, because medical research discovered penicillin as a cure for syphillis. The mental hospitals saved $40,000,000 in this classification in 1951, and they will continue to save this amount every year from now on. Now, it seems that that $40,000,000 saved on custodial care could be invested in further research and training to reduce further the pointless costs of custodial care.

Another example is pellagra. In 1923, mental illness due to pellagra accounted for 8 percent of all mental-hospital admissions in South Carolina. Other Southern States had similar experience. But since that time, South Carolina today seldom has one case of pellagra a year entering its mental hospitals, and even that is cured and sent home within a few days. This is due to one thing—research—the discovery of part of the vitamin B_1 complex, called niacin.

Then there is the remarkable progress made with epilepsy. Research has developed drugs which control or partially control the seizures so that 80 percent of epileptics can now lead normal lives. They don't have to go to institutions. The State of Ohio recently closed down its institution for epileptics.

Twenty-five years ago, two-thirds of the cases of involutional melancholia were hopeless. Now, thanks to the development of shock-therapy through research, the situation is reversed, and two-thirds of these patients are discharged within a year of admission to the mental hospitals. Not only that, but any psychiatrist in private practice can point to many patients he has been able to keep out of the hospitals because of these and other newly developed treatments.

Now I will add quickly, before any questions might be asked, that these accomplishments I have discussed are just a beginning.

Paresis, pellagra, epilepsy, and involutional melancholia are disorders which at their worst only account for a small percentage of hospital beds. The really big diseases in terms of cost and numbers are, first, schizophrenia, and second, cerebral arteriosclerosis (hardening of the arteries of the brain) with senility.

Knowing what research has accomplished already, we know that cures or controls can be developed for these disorders, too. Even if we had no encouragement to date, we Americans have always had the idea that we can accomplish anything if we set out hearts and minds to it.

I know this, that if I saw over a billion dollars being drained out of my business each year, and it was increasing year after year after year, I would have to find ways and means of eliminating that or face bankruptcy. Our Nation cannot afford any drain, financial or physical. Most of us in this country are struggling with all our hearts and all our minds, and you gentlemen of the Congress have the greatest burden, to find ways and means to make our country strong physically, morally, intellectually, emotionally, and economically so that we can withstand any enemy from within or without.

We have posed the problem. We now pose the answer. It might sound foolish for me to say to you in the light of the budget as announced that we want you to appropriate $25,000,000 for the Institute of Mental Health this year. We know, however, that this is the amount that should be appropriated and can be spent intelligently. We feel that a 5-year program embracing this expenditure plus a definite and planned program over a 5-year period will break through barriers and will ultimately reach the goal that we are all seeking—an eradication, or at least a great reduction of this terrible and expensive thing called mental illness. But as I said before, we, too, are realists. We again present you with the problem for your decision. We know that you have faced up to it year after year with intelligence and understanding and insight. We only ask that you use that same understanding, that same intelligence, that same courage, that same insight in approaching that great problem this year.

In closing my remarks each time that I have appeared before this committee, I have stated, "I have confidence in the Congress of the United States and in you gentlemen." I repeat that statement today.

MENTAL HEALTH NEEDS IN THE LIGHT OF THE PRESENT SITUATION BY ARTHUR BUNKER, NEW YORK, N. Y. (COMMISSIONER, PRESIDENT'S MATERIALS POLICY COMMISSION; PRESIDENT, CLIMAX MOLYBDENUM CO.; MEMBER NATIONAL MENTAL HEALTH COMMITTEE)

This is a very hard year to come before you, Mr. Chairman and gentlemen of the subcommittee, and make a request for this mental-health program, which is based on an honest appraisal of what the figure ought to be. We still think that it ought to be a little more than $26 million.

At the same time, every citizen knows the colossal job that is facing Congress of providing money to defend the country. We know that has to be done, and we also know that taking care of the mentally ill veterans is just as much a part of it as tanks and planes and guns and battleships. We feel quite justified in asking for adequate training and research and community clinics and other services in this field of mental health, because we know that they not only benefit the public at large but also the veterans. Personnel trained by this program have gone on the staffs of the veterans' hospitals and clinics. The research discoveries made also benefit the veterans' hospitals and clinics. The clinics under this community-service network are also available to veterans and their families. We can hardly see that this is a good time to make a cut, and particularly in the clinics. The item for the clinics instead of being cut below $3 million should be built up to $4 million, as recommended in our budget proposal.

We can hold the line on this program, but mental illness is not holding the line. As a matter of fact, the Federal Government, and the State governments as well, are losing the battle against mental illness at the present time.

In the year 1950, the Federal and State Governments together spent a total of $1,040,000,000 on hospitals for the mentally ill and veterans' pensions. Out of this, the Federal Government spent $538,000,000 and the State governments $503,000,000. Mental illness costs the Federal Government more than all the State governments put together.

Every year there are more mental patients in the veterans' hospitals and clinics than there were the year before. Of course, every year the cost goes up, too. In 1950, the veterans' hospitals cost about $125 million. Pensions to mentally ill veterans cost the Government a little over $360 million every year and this amount is increasing, too.

Non-service-connected veterans quite often cannot get into veterans' hopsitals because they are already filled to capacity with service-connected veterans. Non-service-connected veterans cannot get into the veterans' mental health clinics at all.

So, it would not seem like a very good time to make a cut in the clinic program under the Mental Health Institute. The veterans as well as others are going to suffer. We have made a start during the last 5 years on a very valuable network of mental-health clinics.

I would not want the Congress to think that we would like to see this whole question placed in the Federal Government's hands. We think it is a joint problem between the Federal Government and the States. As I have said, in 1 year, the Federal Government spent $538 million on mental illness, and the State governments together spent $503 million. One of the most important values of this Federal program has been to encourage the States to increase their clinic programs for early treatment in order to match the Federal money. I think the Congress ought to know that this has not been just a spending program and that the States have begun to pick up their part of the responsibility for running the clinics.

I would like to tell you about a new phase of the National Mental Health Committee's work begun during the last year. The mental hospitals are quite a problem, as you know, to the State governments, and we decided to see whether they might be interested in doing more research and training. We communicated with most of the Governors and found they were even more interested than we had thought. At this writing we have 39 governors, 1 Federal judge, and a mayor as honorary chairmen of our committee. To our knowledge, no citizen's group in the voluntary health movement has ever had such a distinguished and active sponsorship. The governors are active, of course, because the cost of running the mental hospitals is in most States the largest single item in the departmental budget of the State.

Our executive secretary, Lynn Adams, and one of our executive committee members, Mike Gorman, went to the annual Governors' Conference at Gatlinburg, Tenn., in October to talk to some of our governor members about ways in

which the States could increase and improve their research and training programs. So intense was the interest of the governors in this activity that what started out as an informal series of discussions burgeoned into a crusading drive in support of a resolution for a year's study of the whole area by the Council of State Governments.

Gov. Mennen Williams of Michigan was one of the leaders. He pointed out to his fellow State executives that their commonwealths were losing the fight against mental illness; that despite expenditure of a record half billion dollars by the States in 1950 for care of the mentally ill, the mental hospital population had increased an average of 12,600 a year, over the past 5 years. He put his finger squarely on the trouble—the States were spending less than $1,000,000 a year for research projects and training activities which could reduce this load.

The governors rallied behind Governor Williams. The Williams resolution was introduced from the floor and carried by a vote of 45 to 0. Thus passed an historic, unanimous decision that the council be instructed to do a major, year-long study of ways in which the States can accelerate research and training and pool this knowledge on a regional and national basis.

The resultant report will undoubtedly be as important a document as has ever been issued in the field of mental health. With the enormous prestige of the Governors' Conference behind it, it should foster a newly awakened interest in a dynamic attack upon mental illness through research and training.

Mike Gorman went to California and Kentucky, and Lynn Adams to Illinois, Minnesota, Iowa, Colorado, Oregon, and Washington in the fall of 1951. Recently, Mr. Adams made trips to Massachusetts, Pennsylvania, Virginia, Maryland, and New York. The purpose of these trips was educational in nature. The States were furnished portfolios stocked with outlines of research projects which could be tried in the State mental hospitals. After introductory talks with the governors and mental health officials, they met with groups of medical school and university officials, psychiatrists and laymen to enlist grass-roots support for their research and training proposals.

First results are very heartening. Considerable additional research and training sums have been placed in numerous State mental health budgets: Iowa, $60,000; Colorado, $225,000; Washington, about $50,000; Kentucky, $200,000; New York, $150,000.

Our biggest job in 1952 will be an educational one. We must try to expand citizen interest in the need for mental health research and training.

Now to return to the Federal program. I would like to say again today what I said in previous years: The core of this program is to discover and administer cures and control treatments for the mentally ill through a really adequate outlay for research and training. The budget this year stops these activities in their tracks. The one exception is that some additional is given to start the research work at the new institute in Bethesda.

I feel very strongly that we have already paid 10 times the cost for neglecting research than we would have paid for the research itself. I would say that we cannot afford to go on and on pouring over a billion dollars a year of tax money into hospital care and pensions when 25, 40, or 50 million dollars a year spent on research and training and early treatment would within a reasonable number of years make a great deal of this hospital care unnecessary.

We do not have to predict the day when this will happen. We all know what medical research has already done. If it can find cures and controls for syphilis, pellagra, epilepsy, malaria, diabetes and many other diseases you could name, we certainly have reason to expect that improved treatments could be developed for schizophrenia and hardening of the arteries of the brain with senility.

We are not expecting any magic cure that will cause serious mental illness to vanish overnight. We all remember the time when if a man got diabetes, he was a gonner; there was no cure for it. Now he takes insulin regularly and lives out a normal life span, continuing in his regular work. The disease is not cured but he has controlled it. That is a tremendous advance for humanity through research.

Until just recently, there was no real treatment for epileptics, and most of them had to live in institutions. But then research discovered the electroencephalograph, the so-called brain wave machine, and this led to a greater understanding of brain cells and the nature of epilepsy. At the present time, epilepsy is not cured, either, but research has discovered drugs which control the seizures, and 80 percent of epileptics can now live a normal life. The State of Ohio only recently closed down its institution for epileptics at Gallipolis.

Now in line with that, science has developed the electron microscope which can magnify 60 times greater than the most powerful optical microscope. They have acquired one of these instruments at the New York State Psychiatric Institute and Dr. Nolan Lewis, the director, feels very hopeful that studies made with it will lead to discovery of some of the secrets of schizophrenia, the mental disorder that fills half the mental hospital beds, and costs the Nation around 350 million tax dollars in 1950. He and a number of other prominent investigators feel that we are well on the way toward discovering new methods of treating schizophrenics that may enable us to transfer large numbers of schizophrenic patients from costly hospital care to less expensive clinic treatment.

Known methods of treatment, if applied early, have already been proved able to keep many kinds of potential hospital patients out of the hospitals. In 1951, Boston Psychopathic Hospital out-patient clinic kept 175 patients out of the hospitals. To do this on a large scale requires that we train the personnel for the clinics.

We have made a great deal of progress in both research and training, as you can see, during the last 5 years of this program. We have now reached the point where we can profit from the ground work we have laid.

It may be that Congress cannot provide the money during times like these.

I think it ought to be on the record, however, that if and when the money is provided, medical science is capable of discovering a whole battery of cures, controls, and aids to treatment which will make mental illness a great deal less formidable than it is today. I certainly hope that time can come soon.

Senator HILL. I know of my own personal knowledge most of your income you give away each year to medical research.

Mr. MAY. It is like this—I own my income. Most folks belong to what they have got. That happens to all of us. You have to keep holding your pulse. The more you get, the more it owns you. I am a stiff-necked person. I guess I just object to that.

Senator CHAVEZ. You are from Alabama.

Senator HILL. Down in Mobile Bay.

Senator CHAVEZ. Thank you, Mr. May.

Dr. Greenhill, we will hear you.

SUPPORT OF MENTAL HEALTH ACTIVITIES

STATEMENT OF DR. MAURICE GREENHILL, ASSOCIATE PROFESSOR OF PSYCHIATRY, UNIVERSITY OF MARYLAND

Dr. GREENHILL. I am Dr. Maurice Greenhill, a psychiatrist and medical educator, and an associate professor of psychiatry at the University of Maryland.

My position today is that of presenting to you some of the problems related to the community care of individuals who are mentally ill. I spent the last 11 years in North Carolina at Duke University, where I have had the opportunity, in an area that was short of personnel and facilities for the care of individuals with mental ill health, to look many of these problems over, both through the education of medical students and through certain functions out in the community as consultant to community agencies and dealing more or less with the grass roots as far as the setting up of community clinics is concerned.

I have had the opportunity during that time to have something to do in a consultive capacity with program in South Carolina, Georgia, and some of the other Southern States.

MENTAL DISEASE STATISTICS

The whole work that goes on in the community, as far as individuals who need help for mental problems, has continually struck me as well as many of us working in that field. We will look for the moment at the statistics related to this problem and find there are approximately half a million individuals with mental disorders in hospitals.

We find another million and a half individuals with severe mental disorders out in the community, that type of disorder which at one time or another would put them into a mental hospital, or has already done so.

We find about 2,500,000 individuals with minor mental problems. In addition, when one looks at the problems of delinquency, alcoholism, veterans' problems, rehabilitation problems, divorce problems, absenteeism in industry, suicide, panic, and disaster, we see we have a large segment of the population who at one time or another may be afflicted with problems in all of these areas.

It has been estimated up to 10,000,000 of our citizens at one time or another will be somehow involved. One of the ways that psychiatrists and other medical men had thought to deal with this problem is to bring psychiatry into the general hospital. That has been of help. It has also served to cause us to find that a great many people with some of these illnesses that Mr. May has just mentioned, like cardiac disease, cancer, and so forth, also have emotional problems which need help.

When the National Mental Health Act was put into operation, I think that most of the professional workers involved in doing something about it were very much like the doctor who was introduced at a dinner party by the hostess in this way: "Mrs. Jones, I would like to have you meet Dr. Brown. He has discovered a cure for which there is no known disease."

The people that went to work on this problem thought that in some ways they had the answer, but they were not sure about pinning down some of the disease facets that were involved.

Time has gone along and the problem has become sharpened.

I would like to point out to you very briefly what has been done and some concepts as to how this particular problem has been sharpened and what is needed.

When the problem of dealing with people in the community who had mental illness was taken up in a concerted fashion, it was done so largely through out-patient clinics. These clinics had a threefold function: early treatment, prevention, and public education.

This early treatment is a continuing function and a very important one, so important that the number of clinics have increased and these functions have also increased.

FEDERAL-STATE GRANT-IN-AID PROGRAMS

In 1946 there were 24 States and Territories with programs, grant-in-aid programs, which dealt with the care of the ill person with a mental disorder in the community.

Now all States and Territories have such programs.

In 1951, $3,200,000 was spent on this grant-in-aid program, which dealt essentially with the care of the mentally ill person in the community.

There have been increased amounts of State and local funds, both public and private, expended for mental health services. For example, in 1948, State, local, and private funds amounted to $2,250,000 in this grant-in-aid program.

Last year it was $8,400,000. Whereas Federal funds since 1948 have increased a little more than one-half, community funds have increased three and a half times, or approximately seven times as much.

I think in a very practical way this shows that the recognized need of taking care of the millions of individuals out in the communities who have emotional and mental disorders is one which is realized and has been expanding.

Senator CHAVEZ. You are speaking now of those persons who are mentally deranged, but who have not reached that point where they could be taken before a court and have a determination made of their mental condition?

Dr. GREENHILL. Yes, sir. That person, or the person who has already been in the State hospital and is in the process of rehabilitation, getting back into the family and community, and also the large group of people who show types of aberration that ordinarily would not lead them into the State hospital, types of social pathology, absenteeism from industry, people involved in several divorces, children with emotional problems, and a number of others.

MENTAL HEALTH CLINICS

The number of clinics has increased from 172 in 1947 to 330 at the present time. Approximately 100,000 patients a year are taken care of in these clinics.

Senator CHAVEZ. How are they generally handled there? How are they organized?

Dr. GREENHILL. They are, in the main, community clinics set up in a city.

Senator CHAVEZ. Under legislative authority of some kind?

Dr. GREENHILL. Under legislative authority of some kind, either let us say city legislative authority, the public health departments, the Community Chest activities, and so on. Many of them spring up from the community and get assistance from the State and Federal Governments.

When one asks: "Why is there this need for the clinics?" "Why have they increased in number to the extent they have?" it is because in many areas there has been no other place for such an individual to receive early diagnosis and treatment. There are large areas of our country in which there are no facilities whatsoever for diagnosis and treatment of these individuals until they get into the State hospital.

There may be no psychiatrists or very few physicians who are trained in picking up this type of disorder. In many instances these clinics have performed a very useful function in taking care of veterans with non-service-connected disability because the Veterans' Administration hospitals cannot do that.

The clinic has been a line of defense, a means of prevention of a growing disorder, but something very interesting, gentlemen, has happened since this program started.

That is, there have been shifts to other lines of defense. One of the main problems that exists that is back of this, in many instances, is the increased demand for funds for the elaboration of this service, and the communities have realized that from the clinic in the community they can get a type of consultation service, a service to ministers, to social workers, school teachers, industry, to many other segments of the population, professional and nonprofessional, which was hitherto unrealized.

I would like for a moment to point to something that is happening which may in our minds tie together this whole problem of disease, whether it is related to mental disease, to chronic medical disease, whether it is related to other types of disease.

That is, that as we have had an increase in public health facilities and a concomitant decrease in certain types of disease, we know we have had an increase in chronic disease as the length of life has increased.

SOCIAL PATHOLOGY

I think this is fairly commonly accepted onw. But what is not so well known is that social pathology in the communities has been on the increase as many of our public health measures outside that of mental health have made for better health.

It appears to us, all of us working out in the field, that social workers, ministers, school teachers, general physicians, psychiatrists, all people who have their work connected with human relations have found that we are all looking for common denominators and that there may be some connection between the person who gets at an early age high blood pressure or arthritis and the person who at an early age seems destined for the mental hospital.

As we have looked further into this, we begin to wonder if the family or the group, whether it is the neighborhood group or the social group, whatever it is, may not be the unit of disease rather than the individual.

There is beginning to appear evidence that wherever disease occurs, wherever other types of disease occur, and by that I mean when an individual is admitted to a hospital several times, let us say, for high blood pressure, the chances of finding mental disorder in his family, of finding perhaps absenteeism in industry occurring in high incidence, accident proneness, may be higher than in an individual who is not prone to be ill.

I can give you an example of a family in which a little 8-year-old girl was recognized as a school problem and turned over to the school public-health nurse. On her investigation she found that the grandfather had become severely ill with arthritis. She also found that the grandfather had a high incidence of absenteeism in the factory which he owned. She found that the grandmother and mother had asthma. She found that the mother's brother was a conscientious objector and that the father was an individual who had to see a doctor many times throughout the course of a year.

This is only one example, but it begins to look as though many times out in the community we can find nests of pathology which occur in groups which may undermine the work the people in the community might be doing.

So we find an increased demand for consultation services on the part of these clinics which act as the nucleus for this type of approach in the community.

We find also a shift to public health activities. Thirty-four of the States have these grant-in-aid programs administered through the State public health department.

This has brought to the attention of these health departments the fact that there is an abundance, a superabundance of emotional disorder occurring throughout the State and also in the families of those individuals who previously they were treating for other conditions—tuberculosis, cancer, and so on.

We found also that the zones of defense against these are many more; that working in prenatal care, child and school care, rehabilitation—for example, in rehabilitation this whole matter of very slow convalescence may be related to a problem of relationship within the family which slows down the convalescence of an individual.

The clinics out in the communities are asking for more personnel to take care of this growing awareness of the problems existing and are asking for this increased number of personnel to provide consultation services, as well as for early diagnosis and treatment.

COOPERATION IN PROGRAM

I think one of the very interesting developments involved in the community care is the fact that it has thrown people of many professions and disciplines and types of work together in a common effort where there has been a common denominator of certain types of emotional and social pathology which makes for the conscientious objector, the person who is absent from work a great deal, the person who gets involved in traffic accidents, the delinquent who comes to the attention of the courts, the psychoneurotic that goes to a doctor month after month.

Senator CHAVEZ. You think that might be one of the reasons for Government employees trying to reach the job at the last moment? Would that be some kind of an emotion? I see them trying to get there at 8:30 or 9 o'clock, at the last minute. You think it might be due to that?

Dr. GREENHILL. I think it might. We are involved, I am sure, in a period of integration and synchronization where all of us are together trying to reach some common goals.

I think in this particular era this problem of integration of professional workers, social groups, is one of the particular landmarks. These problems out in the community strike us not only as medical problems, but problems which involve the emotional and social health of our Nation as well.

Senator CHAVEZ. You would tell the committee that you would be in favor of Government participation in funds in cooperation with States in order to take care of the different problems that you have announced to the committee?

Dr. GREENHILL. I would very definitely, and it has already been shown that the Federal funds which have been allocated have been a very marked stimulant to the activities concerned.

Senator CHAVEZ. Is there anything further?

Dr. GREENHILL. No, sir.

Senator HILL. Let me ask you one question. Do not most of us race our engines too much?

Dr. GREENHILL. I have heard it said many of us work as if we had Cadillac engines and Ford bodies.

Senator ECTON. The next question is: What can we do about it?

Dr. GREENHILL. I think it is a matter of knowing more about what we can do about it which means increased opportunities for research to find out what we can do about it and how we can carry to the people at large a type of education which will tell them what to do about it and teach them what to do about it.

Senator CHAVEZ. Thank you, Doctor.

Dr. Menninger.

SUPPORT OF MENTAL HEALTH ACTIVITIES

STATEMENT OF DR. WILLIAM C. MENNINGER, MENNINGER FOUNDATION, TOPEKA, KANS.

NEED FOR TRAINED MENTAL HEALTH PERSONNEL

Dr. MENNINGER. Senator, I have a prepared statement that I wish to read, but I will be glad to be interrupted if there are any specific questions.

My name is William C. Menninger. I am a physician, serving as general secretary of the Menninger Foundation, Topeka, Kans. I am certified by the American Board of Psychiatry and Neurology as a psychiatrist, and have been practicing this specialty since the completion of my internship at Bellevue Hospital, New York City, in 1926, following graduation from Cornell University Medical College in 1924.

During the last 10 years, in addition to my clinical practice in the field of psychiatry, I served in the Army approximately 4 years.

Following the war I served as a consultant to several governmental agencies. I have had some important responsibilities in several of the national organizations of psychiatrists.

It has been my privilege to visit many psychiatric hospitals and on numerous occasions to attempt to interpret the present mental health picture to large groups of lay persons.

These and other experiences have given me unusual opportunities to evaluate the progress to improve the mental health of our country. It has given me the first-hand information of our needs in terms of psychiatric manpower, research, and facilities to cope with this problem.

1. My assignment at this hearing is to attempt to present the enormous need for trained manpower if we are to make further progress in the battle against mental ill health.

In doing so I should like:

1. To review briefly some facts regarding the status of mental health in this country;

2. To consider the progress made since the passage of the Mental Health Act;

3. To take stock of our present position; and

4. To indicate essential goals for the next few years.

NEEDS OF MENTAL HEALTH PROGRAMS

II. Mental health needs:

The substantiating facts and figures relative to the status of mental health have undoubtedly been presented to this committee at previous hearings. Nevertheless, they furnish a necessary backdrop in considering ways and means of improving mental health.

Even on the basis of being somewhat repetitious, I should like to summarize briefly some facts and opinions as to why mental ill health is still the Nation's No. 1 problem in the entire field of health:

1. The number of potential persons involved is very great, particularly in periods of acute social stress.

Senator HILL. You see the morning headlines every day, Doctor?

Dr. MENNINGER. I do, usually.

Senator HILL. Could you think of a period in our history where there was more stress than there is today?

Dr. MENNINGER. Senator, I do not think I am competent to answer that accurately. We each live in our own times, and I suppose if one studied the history in 1920 or 1830, he would find that they were having troubles then, too. I think we are, to answer your question.

Senator HILL. We are certainly living under great stress today.

EXTENT OF UNITED STATES MENTAL HEALTH CONDITIONS

Dr. MENNINGER. We cannot ignore the facts that our current method of living is at a faster tempo, with more competitive pressures and with perhaps more social conflicts than ever before. Nor can we forget that we are living in a prolonged period of national emergency.

2. The number of psychiatric patients exceeds the number of patients suffering from any other type of illness.

3. Approximately 50 percent of all hospital beds in America are required for this group of illnesses (662,452 of a total of 1,425,222 beds).

4. By conservative surveys, the personnel shortage in psychiatry is the most acute of any medical specialty. Available: 60,000 physicians practicing psychiatry. Minimum estimated need: 15,000 to 18,000.

5. The amount invested in research in mental health is less than 2 cents out of every dollar spent on all medical research.

6. Personality disorders were the cause of 37 percent of all draft rejections in World War II. This represented one out of every eight men examined.

7. Psyhciatric disability was the greatest single cause of lost military manpower, representing more than 50 percent of all men discharged from military service during the war.

8. The need for treatment facilities, including both hospitals and clinics, is probably more acute than in any other medical specialty.

9. The extent of tested knowledge in psychiatry, especially in the area of prevention, is extremely inadequate.

10. Mental ill health represents the greatest cost in money of any health problem. Even so, we are doing a very inadequate job in caring for our mentally ill patients. Approximately 40 percent of the medical-care budget of the total Federal budget for health is for

mental health, and from one-sixth to one-third of the State budgets in our larger States (New York spends $118 million out of a total budget of $380 million; Massachusetts spends $16 million out of a total budget of $58 million).

MENTAL HEALTH ACT

III. Progress under the Mental Health Act:

I mention this because I think all of us in this field are deeply grateful to you men in Congress who have given us the funds we have had and I think you were undoubtedly put on the spot a good many times and must justify why you have helped us. I cite these facts of which we are proud, that have resulted in progress under the Mental Health Act—

It was my privilege to serve as a member of the National Advisory Mental Health Council to the Surgeon General of the United States Public Health Service from its beginning in 1946 through June 30, 1949. I have had the opportunity to follow it closely since that time.

I have always been impressed with the thoughtful and conscientious administration of this program. I am tempted to review the accomplishments that have been made in the State programs and the investments in research. My emphasis here, however, is to be placed on the training program.

In my opinion the impetus of the Mental Health Act, through its provision of funds for training, has been an enormous factor in our forward progress toward better mental health. The personnel picture has greatly improved during these last 5 years, and much of the credit can be given to two factors.

The Mental Health Act and the progressive steps taken by the Veterans' Administration.

It has been through the Mental Health Act that our medical schools and other training centers have been helped, with resulting accomplishments that otherwise could not have been achieved.

1. Since 1948, the Federal program has provided the funds for the training of 1,700 professional personnel in the field of mental health, psychiatrists, psychiatric social workers, clinical psychologists, and phychiatric nurses.

A very high percentage of these persons, estimated at near 90 percent, have entered public service.

MEDICAL SCHOOL TRAINING

2. The improvements in our medical school curriculum for undergraduate students have been phenomenal.

Whereas 10 years ago many medical schools provided as few as 25 hours in psychiatry in a 5,000-hour 4-year curriculum, there are few now who give less than 200 hours in this subject, continuing throughout the 4 years.

One school now provides 500 hours. Through the Mental Health Act, 42 medical schools have received training grants enabling this change to come about. Currently 1,300 undergraduate medical students in these schools are benefiting from this program.

This change in the medical school training has its real significance in giving the average medical graduate a knowledge of the emotional

factors in disease. Approximately 50 percent of all patients that go to all doctors, do so because of emotional problems that are reflected through the physical organs of the body.

Therefore, the average doctor must know much more about the diagnosis and treatment of such disorders than has previously been taught in the medical schools. The medical practice of specialists and general practitioners can be, and is, a major factor in the total effort to improve mental health.

3. As a direct result of the financial aid from the Mental Health Act, the education of other than physician members of the psychiatric team has greatly profited.

Dr. Robert Felix, the director of the National Institute of Mental Health, tells me that the teaching program of the Institute has directly benefited approximately 5,000 trainees in psychiatric social work; 2,300 clinical psychologists, and 500 nurses.

Just as in the case of the benefit to medical students, the influence of this program is benefiting some 1,200 undergraduate nurses during their training-school experience.

STATE MENTAL HOSPITALS

4. Coincident with the passage of the Mental Health Act in 1946, the authorized hiring schedule of State hospitals called for 79,740 employees. Low salaries, the 12-hour day and the abominable working conditions left 1,600 positions more or less constantly vacant.

Today, a little more than 5 years later, approximately 100,000 men and women staff the State hospitals, which have, in the interim, expanded greatly their facilities.

The average numerical increase in staff is about 50 percent. In a few key hospitals the ratio of staff members to patients has reached a level not too distant from the high standards set by the American Psychiatric Association.

Senator CHAVEZ. I think those figures are very sound. What worries me is not the preparation of personnel to take care of the patients and the program, but the lack of facilities, say, on a State level, or a Federal Government level.

With many of the boys coming back from the war and many of the boys who took part in the First War and the Second World War possibly becoming patients themselves, the hospital rooms appear to be extremely inadequate.

It seems to me we are making more headway in preparing personnel than we are in getting a proper place for the patient.

Mr. MENNINGER. I think I will be referring to that later. If I do not, I will be glad to answer your question because I disagree with you. I will be glad to discuss it more fully.

LACK OF FACILITIES FOR MENTALLY ILL WAR VETERANS

Senator CHAVEZ. Let me put it this way: The New Mexico National Guard were in the Philippines during the hard days. They were in the death march and the surrender of Bataan. They are back now.

You look at some of those boys now and they are just like anyone else. Next week you will hear that so-and-so was taken before a court of law in order to have the court pass judgment as to whether or not

he is mentally ill. Of course, he is nothing but a citizen. The fact is that he was an ex-serviceman is only incidental to the court carrying out its duties in making a determination as to his health.

They send him to Las Vegas, N. Mex. Then the parents get after me and say, "Why can he not go to a Federal Institution at Fort Lyons, Colo., or Fort Worth, Tex.?"

I get after the Veterans' Administration and they tell me they do not have room. They say, "We have more than we can take."

Forty-nine of our boys are at a local institution in New Mexico that cannot take care of its own. I picked up a paper in Chicago last Sunday and I noticed by that paper that the State of Illinois is now insisting that the Federal Government pay for taking care of over 800 ex-servicemen who are now being taken care of by the State laws because the Federal Government does not provide sufficient rooms to take care of them.

Dr. MENNINGER. Even though it is repetitious, let me talk to this point because it is important.

We are very short now of physical facilities. You are absolutely right. I am connected with the Veterans' Administration hospital that has a waiting list of approximately 500 men. They cannot get in. There is no room.

Most of our State hospitals across the country run on the average from 10- to 75-percent overcrowding. I think Arizona has something in the neighborhood of 82-percent overcrowding.

Illinois' last record was 51-percent overcrowding.

We do not have enough physical facilities. You are absolutely right, but partly that is because no matter what kind of physical facilities, unless you have doctors to treat the patients, it does not do any good.

Senator CHAVEZ. It is necessary to have the doctors.

Dr. MENNINGER. If we had enough adequate early treatment, my own conviction is we would have to have no more building for mental patients than we have now.

What happens if we do not give an adequate job of treatment, we do not have the doctors to man the hospitals. One doctor is looking after, right now, an average of 260 patients. Believe me, if you are sick, and you have to share your doctor with 259 others, don't count on seeing him very much. That is the lamentable situation in our State hospitals across the country.

Senator CHAVEZ. Because the average State hospital, as far as the ex-servicemen or the other patients are concerned, is nothing but a confinement place, a jail. They are not a place where they can be cured and get attention.

That is either due to lack of facilities or lack of personnel. I believe they deserve treatment.

TRAINED PERSONNEL SHORTAGE

Dr. MENNINGER. My point is even if we drop millions of dollars into buildings, right now with the Veterans' Administration we cannot staff the buildings we have. It does not do you any good to go to the Veterans' Administration hospital or the State hospital if there

is not a doctor to help you. That is the lamentable fact, that we do not have the doctors.

So while we do need physical facilities, even more, we need doctors who, as a matter of fact, can keep lots of patients out of hospitals that have no other resource than to go to the hospitals.

I will be repeating a bit of this as I read my statement.

Senator CHAVEZ. Please proceed.

Dr. MENNINGER. The number of full-time physicians has risen in these 5 years by 19 percent, supplemented by hundreds of externs, interns, residents, and consultants. Graduate nurse employment has has trebled.

Again this is all response to the Mental Health Act.

Our personal experience in Kansas is pertinent at this point. Four years ago, the Topeka State Hospital was a house of doom where 1,800 patients lived in untreated misery.

In 1948, with a psychiatric staff of 3 overworked doctors and 1 nurse, only 41 patients were discharged, death claimed 4 times the number of people discharged.

The people of Kansas, presented with the fact, decided that it was totally uneconomical and a tremendous waste of human resources to keep piling people up in this house of doom. The Kansas Legislature responded with a large appropriation. The full time medical staff at Topeka State was increased to 12, and 10 physicians in resident training were added; the lone nurse found herself joined by 26 others. There was an addition of 7 psychiatric social workers, 6 psychologists, more than 100 attendants, and 40 regularly attending physicians consultants.

What are the results at Topeka State? In a few short years since the change, the number of patients was reduced from 1,800 to 1,500. A number of supposedly "hopeless" elderly patients, relegated to the back wards of the hospital for many years, are now back in the community, practically resurrected from the dead.

LENGTH OF STAY IN MENTAL INSTITUTIONS

Senator CHAVEZ. I believe this committee had some testimony, probably 2 weeks ago, in discussing this same subject matter. Now that you speak of elderly patients, generally if a patient stayed there 5 years, that probably meant he stayed there the rest of his days. We had testimony to that effect. That was due to the lack of attention or the lack of personnel to take care of patients of that nature.

Dr. MENNINGER. Senator, just the opposite is true. These patients did not see doctors. With a little human interest and some psychiatric help, a great many of these people who had been there 26 years are rehabilitated citizens in the community.

It is the spectacular part of what can be done. This is not any miracle. It is proof we can do a job if you have people there to do it, if you have the doctors, the nurses, the social workers, the trained attendants.

PATIENT TURN-OVER UNDER MODERN PROGRAM

Of course, that took money to do it. The State of Kansas put in $2 million to change this place to really a hall of hope and the change to these people is enormous.

The turnover is about four times what it was. It is tremendously heartening to see it can be done.

Senator CHAVEZ. Do you follow them up after they get out?

Dr. MENNINGER. Yes, we do now. We did not before.

This is no miracle. It is vivid proof the job can be done—the recovery of precious human beings through increased appropriations that permit the adequate training of personnel to treat these patients.

There is no question then as to the great benefits the funds from the Mental Health Act have been in the increasing of trained personnel in the field of mental health. The progress is tremendously heartening, but where are we?

PRESENT STATUS OF PROGRAM

IV. Where are we?

As encouraging as our progress has been, we must face the facts that we are a long ways from our goals. What are those facts?

1. While the responsibility for the Nation's mental health is the responsibility of every individual in terms of parenthood, community participation, leadership, citizen responsibility, the movement must have professionally trained people.

Treatment will always be a responsibility of these trained personnel.

On conservative estimates we need 8 to 10 thousand more psychiatrists. We are currently producing them from all training centers in the United States at the rate of about 400 a year.

2. We have made modest grants to only 42 of our 79 medical schools, and, as a consequence, many young physicians are graduating with a totally inadequate understanding of the personality and its relationship to physical ill health.

3. The medical load in the Veterans Administration hospitals continues to run more than 50 percent of its patients as psychiatric problems, and the need for personnel is acute. The necessity to open more hospitals is anticipated, but we can nowhere near adequately staff the psychiatric facilities now in operation.

4. Our national average ratio of psychiatrist to patient in our State hospitals is about one to 250. (Last official figures available were 1949, when there were 1907 physicians to 471,290 patients, a ratio of 1 to 260).

5. We are currently paying $350 million a year in pensions to veterans suffering from mental illness, plus the $126 million for maintenance of the patients now in Veteran Administration hospitals.

6. The military forces have more than 200 vacancies for psychiatrists and to take them from civilian life is literally robbing Peter to pay Paul.

On this point, however, great progress has been made since World War II. Whereas there were only three certified psychiatrists in the Army prior to the war, there are now 15.

The results in Korea are an indication of the promise in times of conflict if we are given the men to do the job.

There, the handful of psychiatrists, one with each division, are handling the psychiatric casualties right at the front lines before they have a chance to freeze into severe neuroses and psychoses. They are returning 70 percent to combat within 2 weeks; of the remaining

30 percent, the vast majority are returning to duty in 4 to 6 weeks, only 5 percent are sent home as psychiatric casualties.

In making these points to indicate our acute personnel shortages, I am not including the crying need for more knowledge, research. I wish however, to emphasize that the very real bottleneck in our mental health program is the shortage of training personnel, psychiatrists, clinical psychologists, social workers, nurses, adjunctive therapists, aids. Despite our encouraging progress to meet these, we must accept the fact that we have only begun.

RECOMMENDATION FOR FUTURE PROGRAM

Where must we go in the immediate future?

1. We must improve our State hospitals.

They remain a blot on our social conscience, housing as they do more than half a million people who have no voice. In far too many instances, they are still "snake pits" where living death is more common than restoration to community living.

We discharge about 50 percent of admissions, a third of whom must be readmitted.

If we could give early effective treatment, it is probable that 80 to 85 percent of these admissions could be returned to community life as productive citizens. It is reasonable to assume further that we might need no further hospital buildings if we could develop community clinics for early treatment and really provide adequate care in our hospitals.

But the pressing need is personnel. The job cannot be done without trained staffs. To even meet the staff patient ratios recommended by the American Psychiatrist Association, we need twice the number of psychiatrists that are now in our State hospitals, treble the present quota of graduate nurses, and eight new occupational therapists for every one now on the job.

A key person in our State hospital program is the psychiatric aide or attendant. Along with the curse of understaffing, too many institutional programs have regarded the aide as a high class janitor although it is he, more than any other person, who lives with and attempts to care for the patient.

Not only has he been regarded as "cheap help," and very underpaid in comparison to his responsibility, but it has been the rare institution that provided any kind of training for him.

He has had almost no professional standing although he has probably more to do about the potential recovery or worsening of the patient than anyone else.

With approximately 80,000 aides for our 600,000 patients in mental hospitals, it would seem imperative to create standards and training schools for these people.

I would fervently hope the National Institute of Mental Health might be given the money to start a number of pilot projects in this vital area.

PUBLIC INFORMATION FOR MENTAL ILLNESS

2. Community clinics and guidance centers: The public has become sufficiently enlightened about emotional ill health as to want, with

increasing insistence, community clinics, information centers, child guidance facilities, psychiatric wards in general hospitals.

A few communities have acquired such facilities. Many others are trying to do so. And the justification is very real. The need for early treatment of mental illness, for the treatment of illnesses not requiring hospitalization, advice about marital and family problems, counsel about children.

Senator ECTON. Mr. Chairman, may I interrupt there?

Senator CHAVEZ. Yes.

Senator ECTON. Doctor, how many of these community clinics are there now? It seems to me that those are very important and we need more of them.

Dr. MENNINGER. Senator, at the present time there are approximately about 1,300 if we count every clinic in every city in the United States. We estimate that that is a very grossly inadequate number.

The Senator asked a question a few moments ago which I think I can anwser as to under whose auspices these are. Sixty percent are under some kind of State offices; that is, Federal, State, or otherwise. Twenty-seven percent are under the auspices of various kinds of social agencies, mental hygiene societies, and other groups.

The small percentage remaining are under schools, with the Veterans' Administration now running a few, a small percentage of this total.

Now, these are tremendously helpful. You see, one of the things that we in psychiatry are so convinced of is that we would not have to hospitalize many people if we had outpatients' clinics for them to go to. But they simply do not exist.

Senator ECTON. I have had occasion to visit some of these hospitals, and while I could not identify and had no way to diagnose the various cases, being a layman, in the short time that I had to observe some of those patients, I came to the definite conclusion that there were many, many of them who were not crazy at all. They were just a little bit queer along certain lines.

Dr. MENNINGER. Senator, you know, we are all queer to some degree. The people that go to these clinics are not crazy. An unfortunate thing is that most people think of psychiatry in terms of crazy people, but they make up a small percentage of the group requiring psychiatric service, about 5 percent.

Senator ECTON. I am interested in these community clinics, and I know it would be very helpful if there were just some way to eliminate the little quirks in the mental make-up of these people.

Dr. MENNINGER. The chances are that those clinics would catch such conditions.

Senator ECTON. I agree with you. It is just a matter of getting them to have the right mental attitude. It is a question of mental attitude in many of these cases.

Dr. MENNINGER. And information and a little guidance.

UNDERSTANDING THE MENTALLY ILL

Senator ECTON. From my short observation, it seemed to me that there were two things that put a lot of those people in there. One was worry, excessive worries, and the other was that, for some reason or

other, they had surrendered within themselves the instinct for survival.

Did you ever see a fighting man put into a mental institution?

Dr. MENNINGER. Oh, yes; many, many times.

Senator ECTON. Unless he was vicious and a murderer.

Dr. MENNINGER. Senator, if I may, it is far more complicated than the matter——

You see, when you say that these people worry, when you tell one of these men to stop worrying, it only indicates that you don't understand the man.

Senator ECTON. He just keeps on worrying.

Dr. MENNINGER. It is true that maybe some people have an unconscious satisfaction out of worrying, they do such a good job, as you observed. But the fact remains that one cannot stop worrying any more than the man who is afraid to go up in an elevator. He may know that it is silly, but the fact remains that he cannot go up in an elevator. That is true of eccentricities that a lot of us have that do not necessarily incapacitate us. We have our funny notions, our feeling that this is so, or that that is so.

When somebody else says that we are absolutely wrong and we do not know what we are talking about, we think we do.

You see, the man that worries, of course, has varying degrees of internal and external causes for making him do that. If we see the external causes, we understand him better. He may have internal causes which may cause some of the most serious illnesses which we do not see at all.

Senator ECTON. But you would not try to cure him by telling him not to worry?

Dr. MINNINGER. Never. We only do not understand him if we tell him that.

Senator ECTON. Well, thank you. I did not want to interrupt you.

Dr. MENNINGER. That is all right. I am glad you did.

Well, we were talking about community clinics and guidance centers, their justification, and why we need them so badly.

SHORTAGE OF PSYCHIATRISTS

To be sure there are a greatly increased number of psychiatrists in private practice as compared to even 10 years ago, but with hardly an exception they are overloaded with patients.

It has been jokingly remarked that getting a date with a psychiatrist is not dissimilar to getting one with your dentist—perhaps he will be able to see you 6 weeks hence.

But the bottleneck again is trained personnel. The psychiatrists simply are not available. The only answer is to augment greatly our training programs. With only 400 trained psychiatrists finishing each year to meet a current deficit of 10,000, it will take 20 years to reach the point where we should be right now.

The training grants under the Mental Health Act have been a great impetus, but far, far from being adequate. Each year on the Council, during my service on it, we had only sufficient moneys to grant about a third of the appeals which we could approve. And at the present time, there are requests amounting to over $2 million that have been approved by the very thoughtful committee who in-

vestigated them, which cannot be made for lack of funds. These requests do not include the many institutions that are capable of expanding their program if they had the funds to do so. Many, many applications are terrifically slashed, or even turned down, because of lack of funds.

A specific instance: An endowed training center has a residency training program for approximately 100 psychiatrists. An application toward the financing of this of $100,000, justified with very firm reasons, was whittled to an actual grant of $20,000, a sum not even sufficient for the administration of the program, let alone the employment of additional strong faculty members.

Many institutions could double their programs if money was available. Additional money would enable the opening up of new training standards of many existing residencies to be greatly improved. This principle applies not only to psychiatric training but also to the training of social workers, clinical psychologists, adjunctive therapists, and psychiatric aides.

PREVENTIVE PSYCHIATRY

3. Looking at the pressing needs in our immediate future, we must develop preventive psychiatry. We need to be able to apply the technical knowledge gained in psychiatry in such way as to prevent mental ill health.

A beginning has been made, through small groups of psychiatrists working in industry, in educational institutions, in public health, in the military forces. On the basis of the rate of present production of psychiatrists, we will never have enough of this rare category of professionally trained persons to meet even the treatment needs.

It is imperative, therefore, that personnel be trained to go into this field of prevention, about which, to date, we know so little. Again, it is the bottleneck of personnel.

MENTAL HEALTH RESEARCH AND FACILITIES

4. Research: Mr. May testified before you today on the need for research in the field of mental health. But my interest in the subject is deep. I cannot look into the future without the recognition of the vast amount of information and skills we should have that at present we do not have. And mental ill health has had so little economic support.

There are probably few, if any, psychiatric institutions that have as much as $100,000 a year for research, with the great, great majority having no budget for such.

We are justly proud of what has happened in the field of cancer, but by contrast, one cancer institution has an annual budget of $2 million. This is a sum that approximates the total amount of money invested in research in mental health for the entire country.

5. Facilities: America has a vast investment in its physical facilities in the field of mental health, thinking of the community clinics. But the great majority of these were built many years ago at a time when we knew little about the nature of the illnesses to be treated. Many of them more nearly resemble jails than hospitals, quoting you, Senator. This was written before you said it, but it is what you stated. None

of them were built with the plan for education and research. These latter are now the great needs in our battle for better mental health.

The Mental Health Act now authorizes Federal aid for the construction of facilities. If we are to meet the enormous problems created by mental ill health in the country, we need not only personnel and research and State programs, but many of the units carrying on such activities must have economic help to provide physical facilities and research beds. If we are going to meet the total problem of mental illness, governmental support must be forthcoming in this specific area as well.

These remarks, Mr. Chairman, and honorable members of this committee, represent an all too brief summary of some facts and my opinions about the needs in the field of mental health. To do this requires that we, the planners, must organize a long range project that will result in a greatly increased number of trained personnel, a much greater volume of tested knowledge—research—and the necessary physical facilities to carry out the program. There are immediate and pressing opportunities for the investment of far larger sums than as yet have been appropriated for these purposes, sums that should pay off in greater happiness and productivity and richness of life.

Mr. Chairman, I count it an honor and a privilege to have had the opportunity to make these remarks to this committee. I accepted it, very aware of the great responsibility that I as a professional worker in this field assumed. I know it is our responsibility to attempt to present our experience and knowledge to you as a basis for your action.

It is with strong conviction and deep sincerity that I plead for the clear understanding of the magnitude of this enormous problem of mental illness and prompt and all-out action toward its solution.

I know that I bespeak the fervent hope of a horde of mentally sick individuals in America, as well as the all too few physicians and professional workers in the field of psychiatry.

I plead for the ways and means to combat and neutralize the forces in men's minds that lead to broken personalities, broken homes, delinquency, and crime. I plead for a better chance to find the factors that make men suspicious, greedy, dishonest, prejudiced, unhappy.

I have no illusions that Government funds can solve these problems, but I am sure that they can go a long ways toward providing a more rapid and effective solution. I am sure that this committee will have a great deal to say as to whether we take a major step forward in our fight against mental ill health, or whether we must stay stationary, or even, under the pressures of many other budgets, go backward.

Senator CHAVEZ. Dr. Menninger, you have made a wonderful statement, and I feel that I express the sentiments of the committee in saying that we are grateful that you and the other gentlemen who have appeared here this afternoon were able to appear before us. You are not connected with the Government; the other persons who appeared before us are not connected with the Government, and we feel certain that the statements that you have made before the committee come from the heart.

Dr. MENNINGER. They do, Senator. Thank you.

Senator HILL. May I join our chairman in what he said, and also say that I am sorry that I had to leave for a few minutes. They had a roll call, and I had to go up on the floor.

We have had some wonderful testimony here from you and Dr. Greenhill and Mr. May.

You are rendering a great service. I hope that you will miss no opportunity to take the message you have to what I call the grass roots; that is, the people back home. I wish everybody in America could have heard the testimony we have heard this afternoon. If they had, our problem would be much easier. After all, our strength or our weakness is in the foundations, and our foundations are back home.

I commend with all my heart what you have said here, and I hope you can take advantage of every opportunity to spread this message.

Dr. MENNINGER. I do as much as I can. Unfortunately, I have had to turn down two opportunities in Alabama. That distressed me enormously because there were a great number of people there I wanted to speak to.

Senator HILL. I am sorry to hear you say that, but I am sure that you have a rain check. I hope you will come soon.

Senator CHAVEZ. Until we can carry the story such as you have told us this afternoon to the people, and impress upon them the seriousness of this situation, we are going to have that class of institution.

Dr. MENNINGER. That is right.

Senator CHAVEZ. The hospital in my State was built possibly 50 years ago to take care of a few hundred patients. Now they have pretty close to one thousand, and it is a jail. I do not say that with the idea of criticizing any of the officials that have charge of it at all, but it is not adequate to take care of the situation.

Senator Ecton, do you care to comment?

Senator ECTON. If I may, I would like to have this off the record.

Senator CHAVEZ. Thank you, Dr. Menninger.

Someone spoke about the grass roots a little while ago.

Senator HILL. I spoke of the grass roots. I am a great believer in the grass roots.

(Off the record.)

Senator CHAVEZ. Our next witness is Mr. John L. Dornacher, business administrator of the Lovelace Clinic and Lovelace Foundation for Medical Education and Research, of Albuquerque, N. Mex.

I am going to give him permission to talk on the general subject of research, or whatever he may want to state before us.

FEDERAL AID IN FIELD OF MEDICAL RESEARCH

STATEMENT OF JOHN L. DORNACHER, BUSINESS ADMINISTRATOR, LOVELACE CLINIC AND LOVELACE FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH, ALBUQUERQUE, N. MEX.

Mr. DORNACHER. First, Senator, and gentlemen of the committee, I wish to thank you for this opportunity to appear here today. I wish to tell you how much I appreciate hearing the testimony that has been presented here today. It certainly has been stimulating.

One thing that I would like to bring up is something that stems from my recent experience in checking on the construction of hospitals across the country.

We start out to do this work in an effort to set up clinics across the Nation. We are talking about mental clinics. I hope the same mistake will not be made there as has been made in the construction of hospitals in the smaller communities.

I have had an opportunity to visit a number of the smaller communities where 75- and 100-bed hospitals have been built at great public expense and great personal expense of the individuals of the community, and to find that some of these hospitals have staffs of six men. They cannot possibly work to full capacity for years and years, and the communities are too small to attract the kind of people that can staff the hospitals.

I think the same thing will be true with the mental centers if they are spread too far. I think we have to recognize the change in transportation and build toward the centers, the well-staffed, complete centers. We will then have a much more successful and a much more economical medical set-up.

Now, that is not what I came to talk about. My main purpose here is to lend my voice to the efforts of promoting research.

I would like, before going into my prepared statement, to cite a few of the things that research represents.

All we need to do is to look around us and we see the products of research. We see the paint on the walls of the room, the light by which we are reading. We get a time signal from the back of the room, indicating what time of the day it is.

The products of research are with us everywhere.

Now, my father was a conservative individual. He always taught me that I would never get anything for nothing; that it was just not possible that you would get something for nothing rather.

But I think he missed a very important point. My being born in the twentieth century, I consider that I am rich automatically, rich in the material things that centers of research and development have provided.

For that reason, I am interested in giving an impetus to the system of research and development that will step things along a little faster.

As an example, coming down here, we came through some very bad weather. Flying in the plane, we got up into very turbulent weather, and we went as high as 21,000 feet, but we still could not get out of the turbulent weather. That was as high as this particular plane could safely fly.

Well, it was very gratifying for me to know that in just a few years, from the information we have in our aviation medical section, we will be able to fly over that weather. We will be able to fly over that 21,000 feet of soup, as they refer to it, without any trouble and fly along comfortably.

Now, turning to my prepared statement, first, I wish to cite the need for Federal aid in the field of medical research. I do not need to dwell long on the position of the privately endowed college or university today. One need only check on the fund-raising campaigns of the various schools in the country in the last few years, which

were prompted by an effort to support their basic teaching and research programs, to understand that the cost of operations at previately endowed schools is exceeding current earnings.

PRIVATE GRANTS DISAPPEARING

The large fortunes, which once were a source of endowments to schools, are disappearing. The position of the universities and colleges is not mentioned as a criticism of our present conditions.

That is simply stated as a fact to explain the present condition.

This, I believe, is a serious situation especially in the face of the great impetus to scientific research supplied by the last great war and the demand for the production of scientific investigation in the present world situation. The position of newly formed or young research organizations is doubly serious.

A brief analysis of the situation seems to call for careful consideration on the part of those at the head of our Government as to whether or not a yearly increase in assistance to the scientific institutions is indicated.

Other major governments across the world have recognized the problem and have dipped deeply into limited budgets to carry along scientific work. You do undoubtedly hear criticism to the effect that this is a trend toward socialism, a trend toward state control of another part of the American way of life.

I am satisfied this criticism is voiced by short-sighted individuals. The directors of our large corporations across the Nation have not displayed such short-sightedness. They have learned the value of sound investigative work and sound development work, and have invested heavily in research and development. They, of course, have invested first where the work would assist in placing their companies at the head of their respective fields, and often the byproducts of their work have contributed to the general scientific knowledge, not excepting medicine and the allied sciences.

The practice of medicine in the United States does not allow for the cooperative public effort of the corporate enterprise.

SOURCE OF FUNDS FOR MEDICAL RESEARCH

It is impossible for the practice of medicine to be carried on under corporate law. Therefore, financial support of the field of medical research rests primarily in the hands of:

A. The State-supported universities, particularly some of the larger schools which have been able to acquire a few of the still remaining private grants;

B. A few privately supported foundations, whose total funds are limited;

C. The pharmaceutical companies, whose laboratories recently have aided greatly in the antibiotics field; and

D. Governmental funds available to Government and non-Government laboratories.

For the preceding briefly stated reasons I am here to encourage more substantial support of medical research in our universities and private foundations by the Federal Government.

I wish also to mention and emphasize the fields where it appears that help is needed most. I could not set out to present this picture

honestly without mentioning first the very great requirements for investigative work, basic, diagnostic, and therapeutic, in the fields represented by the several degenerative diseases, the mental diseases, and the increasingly prevalent group of neoplastic diseases.

We have had great representation on those two subjects today.

Though one recognizes that the Federal Government is providing considerable help in these fields, the need far exceeds the work possible with available funds and this is particularly true in certain areas of the country.

BASIC RESEARCH NEED

Whatever the problem, there always is a primary demand for greater support in the field of basic research. One often hears criticism of America in this respect. It is often said that the United States is excellent in the field of developing the ideas of basic research into a maximal and laudable productive effort, but lags behind the European nations in fundamental work.

Lengthy arguments on this point could be formulated, but I believe this country cannot be too proud of its contribution in this regard. To mention basic research in the medical field one may cite the specific need for investigative work dealing with one of the main systems of the body; namely, the lymphatic system.

Now, this morning the doctors, who are much better qualified to discuss this subject than I am, touched on that briefly when they told that they had found that it was necessary to remove additional tissue in some of these surgical procedures in order to get to the tissue where the cancer cells had been carried. A greater knowledge of the circulation of the lymphatic system is one of the principal things that will lead to better control of cancer.

A better understanding of the normal and abnormal behavior of this circulatory system certainly is needed.

Also, there is a need for more basic knowledge in the physiology of respiration and metabolism, in high blood pressure, and in cancer. Basic work in psychiatry, particularly in the patho-physiology involved in the several psychoses, is glaringly lacking, as is the social understanding of those unfortunate individuals stricken with a mental malady.

Not only is the basic understanding of this group of diseases deficient but so are therapeutic facilities throughout the country.

One often hears people ask why there is so much mental illness to care for today. This probably indicates an increasing and encouraging awareness of the problem rather than a reflection of an increase in the percentage of mental disturbances, but also involved is the fact emphasized by the census figures: there are simply more actual cases of mental illness because of the great increase in population over the last two decades.

It is alarming that today some of our States are attempting to care for the mentally infirm with approximately the facilities actually required for the 1920 population.

Here is a situation which I believe calls for immediate action. Not only do the States need assistance in enlarging their mental hospitals but education of the public to encourage, support, and demand the establishment of psychiatric wards in general hospitals is one possible means of meeting the emergency.

With psychiatric facilities in the general hospitals many of the cases that eventually become State wards might receive necessary early diagnosis and successful treatment and many of them might well continue as useful members of society. I can show you instances where in some cities the only detention facility for the mentally ill is in the city or county jail.

This is a repetition of what has been said, but I think it deserves repetition.

This is a sharp indictment of our society and certainly our Nation in this enlightened age canont justify the placing of mentally ill persons in a cell in jail when the individuals so obviously need a hospital bed.

ALLOCATIONS OF STATE GRANTS

I feel that it is impossible to overemphasize this problem and I would like to recommend to this committee that they seriously consider recommending doubling all allocations for Federal aid that apply to this field.

I represent a sparsely populated section of our country. Working in the field of medical administration, I have had an opportunity to observe the problems that develop in the Southwest. I am talking now of west Texas, New Mexico, Arizona, and the southwest section of Colorado and the western sections of Kansas and Oklahoma, for this is the area served by the medical facilities available in Albuquerque, N. Mex.

I want to make it plain that I have no criticism of the efforts of the State departments of public health as supported by the Federal Security Agency, or of the efforts of the individual practitioners and the men at the head of the various schools and privately supported medical organizations in that area. I know the people in the field of medicine in this area are progressive and ambitious to do evertyhing they can to promote health and find ways and means to provide better care and treatment of the sick.

However, the section is sparsely populated and funds that accrue in the Southwest for work in this field are necessarily limited. I would like to see more money made available through the Federal Security Agency, primarily the Department of Public Health, to help the people in this section improve their standards of medical and hospital care and to help the medical schools and the private foundations promote more work in basic research and in clinical research.

To accomplish this, I do not suggest special separate allocations, but I would like to see a revision of the formula which allocates public health allotments on a population basis. This I believe can be accomplished by an equitable formula based on population on a ratio to the area involved.

To be sure, the real needs of an area, regardless of locale, deserve the most careful analysis and consideration.

This and similar requests for attention and help from the Federal Government may need some explanation. Let us look at one of the principal changes in our social system, and attempt to draw from this evidence some idea of what we may expect in future change in the field of medicine. In the relatively short period of 25 years, our social system has changed enough to shift responsibility for charity completely.

We all can recall how in our home communities it was the general and accepted practice for the more fortunate families to accept as their responsibility a charitable obligation toward those families less able to provide for themselves and their children. The individual's contribution has in no way been reduced. The great change in social responsibility has simply shifted the administrative load from the individual to the States' broad bureaucratic program. Any argument as to the merits of this change is rather futile for it is here and the sound attack is to learn to operate the system.

In the field of medicine I would like to advocate some anticipation of an approaching major change and thereby help to save some of the trial-and-error expense. We should consider how rapidly the world is adjusting to changes wrought by transportation. I am satisfied that transportation is an ever-increasing medium of change which will transfer care more and more to medical centers.

In a book recently printed for the Russell Sage Foundation, I found a good illustrative story which I will borrow. It is an old account of a group of people who lived in a village at the base of a great cliff. At the top of the cliff ran a much used highway, and so many hapless travelers fell over the cliff that the kindly villagers were kept busy picking them up and caring for their wounds.

Finally at great expense they purchased an ambulance which they kept ever ready at the base of the cliff for the better care of the unfortunate wayfarers.

An old man asked them, "Why do you not build a fence at the top."

But the screams of the suffering were sharp in their ears and they were so busy helping the injured that they could not take time to climb the cliff and build the fence.

It is my contention that we must not continue to spend all our efforts toward running an ambulance. More basic research represents the means of building the fence at the top of the cliff.

The support of major medical centers at the centers of transportation is another means of building the fence, and still most pressing are the needs for adequate hospital facilities for the mentally ill, with opportunity for early care and treatment.

LOVELACE CLINIC AND FOUNDATION

Senator CHAVEZ. Mr. Donacher, will you kindly identify both the Lovelace Clinic and the Lovelace Foundation for the record?

Mr. DORNACHER. Yes, sir.

The Lovelace Clinic is an association of doctors operating as a private medical clinic without any outside support. It has a staff of approximately 32 doctors at the present time. It was organized on this basis in 1947 by Dr. W. R. Lovelace, Dr. W. Randolph Lovelace III, and Dr. E. T. Lassetter.

Senator CHAVEZ. Does the Lovelace Clinic have its own hospital facilities?

Mr. DORNACHER. No; the clinic does not have its own hospital facilities. The Methodist Women's Division is building a new hospital to be known as the Bataan Methodist Memorial Hospital on land given them by the foundation right near the clinic.

Senator CHAVEZ. Then the clinic is what the word means, just that?

Mr. DORNACHER. Just that, yes.

The foundation is a separate corporate entity which is currently engaged in medical education and medical research. Its principal work at the present time is in the field of aviation medicine.

Senator CHAVEZ. Dr. W. Randolph Lovelace II is the same doctor who was at the head of a medical group for the National Defense Agency?

Mr. DORNACHER. Yes; the Joint Services Committee.

Senator CHAVEZ. Thank you, Mr. Dornacher.

Senator Ecton, do you have any questions or comments?

Senator ECTON. I believe not. Thank you.

Senator CHAVEZ. Now, Dr. Felix, you have heard the testimony this afternoon on the matter of Federal aid for mental illness, research, and so forth. You, as the head and the director of that agency in the Bureau of Public Health, I take it, would generally agree with the testimony given this afternoon?

Dr. FELIX. I do most heartily, gentlemen.

Senator CHAVEZ. Thank you.

That is all for this afternoon. The committee will be in recess.

(Whereupon, at 4:25 p. m., Wednesday, March 12, 1952, a recess was taken, to reconvene at 10:30 a. m., Thursday, March 13, 1952.)